

Which is TRUE:

- A. Antagonizes the effect of nondepolarizing muscle relaxants
- ☒ B. Produces clinically detectable muscle weakness when administered intravenously prior to anesthesia.
- C. Is indicated for neuroleptic malignant syndrome
- D. May cause hepatic failure when used prophylactically before anesthesia.
- E. Has increased effectiveness when combined with calcium entry blockers.

8. The two E oxygen cylinders on an anesthesia machine have pressure readings of 1100 psi each. When oxygen flow is 5 L/min, there will be sufficient oxygen for approximately

A. 2.5 hours

- A. 2.5 hours  
☒ B. 3.5 hours  
 C. 5.5 hours  
 D. 7 hours  
 E. 8 hours

49. A 73-year-old man received an uneventful epidural anesthetic for total knee arthroplasty. Twenty-four hours later he has a painless flaccid paralysis in both legs. This clinical presentation is MOST consistent with

- A. Adhesive arachnoiditis
- B. Anterior spinal artery thrombosis
- C. Epidural abscess
- ☒ D. Epidural hematoma
- E. Transverse myelitis

50. After brachial plexus block, a patient has sensation over the inner aspect of the upper arm. Block of which of the following nerves would abrogate this sensation?

- ☒ A. Intercosio brachial  
☐ B. Median  
☐ C. Musculocutaneous  
☐ D. Radial  
☐ E. Ulnar

October 06

51. The MOST likely effect of a celiac plexus block for an abdominal operation is:

- A. Bowel distention
- ☒ B. Hypotension
- C. Incisional analgesia
- D. Muscle relaxation
- E. Urinary retention

52. Compared with the use of epidural bupivacaine 0.25% alone, the addition of fentanyl will result in:

- A. Increased vagal activity
- B. Increased motor block
- C. Increased sympathetic block
- ☒ D. More rapid onset of analgesia
- E. No change in duration of analgesia

53. Compared with epidural morphine, intrathecal morphine produces:

- A. Better relief of visceral pain
- B. Greater loss of analgesia after administration of naloxone
- C. Less pruritus
- D. Less urinary retention
- ☒ E. More respiratory depression

54. In the adult respiratory distress syndrome (ARDS), which is TRUE:

- A. Alveolar edema occurs as a result of increased pulmonary capillary hydrostatic pressure
- B. Lung compliance is increased
- ☒ C. Pancreatitis may be the cause
- D. The etiology of the pulmonary failure is identified by examination of the chest x-ray
- E. Positive end expiratory pressure (PEEP) can be used to increase intrapulmonary shunt

- 36
55. When an intra-aortic balloon pump is being used :
- A. After balloon deflation the assisted systole is increased compared to unassisted systole
  - B. Cardiac function is improved by an increase in preload to the left ventricle by balloon inflation
  - C. Blood pressure is increased through an increase in afterload during systole
  - ☒ D. Coronary blood flow is increased by balloon inflation during diastole
  - E. Balloon inflation should be timed to occur at the same time as aortic valve opening

- 73
56. Which of the following is compatible with the diagnosis of irreversible brain stem death?

- A. Temperature less than 30°C
- B. Seizure activity
- ☒ C. Spinal reflexes
- D. Unknown cause of coma
- E. Decerebrate posturing

- 71
57. With regard to the arrhythmias, which is TRUE?

- A. A wide complex tachycardia may be supraventricular in origin
- ☒ B. Amiodarone may be used to treat supraventricular and ventricular tachycardias
- C. Lidocaine is indicated for supraventricular tachycardias
- D. Procainamide is indicated for Torsade de Pointes ventricular tachycardia
- E. First-degree AV block is defined by a P-R interval greater than 0.12 seconds

- 7
58. An example of nociceptive pain is :

- ☒ A. Pain from chronic degenerative joint disease -
- B. Phantom limb pain
- C. Postherpetic neuralgia
- D. Refractory pain after spinal cord injury
- E. Refractory pain after cerebrovascular injury



59. A true statement about nonsteroidal anti-inflammatory drugs is:

- ☒ A. They work at both peripheral and central sites to block prostaglandin synthesis
- B. They work primarily by stimulating the production of cyclooxygenase
- C. The effect of aspirin on platelet function is reversed 24 h after discontinuing the drug
- D. Food ingestion with these drugs decreases their absolute bioavailability
- E. In general, these drugs demonstrate very little protein binding

60. All the following may alter stimulation thresholds for pacemakers EXCEPT:

- A. Hypokalemia
- B. Hyperkalemia
- C. Hypoxemia
- ☒ D. Isoflurane
- E. Carbacholamines

61. A rare postoperative complication that can occur after abdominal aortic aneurysmectomy is:

- A. Renal failure
- B. Respiratory failure
- ☒ C. Spinal cord infarction
- D. Hypovolemia
- E. Myocardial dysfunction

62. Methods of renal protection before aortic cross-clamping may include all the following EXCEPT:

- A. Intravenous mannitol 0.25 to 1.0 g/kg
- B. Intravenous furosemide 5 to 50 mg
- C. Infusion of low-dose dopamine 1 to 3  $\mu\text{g/kg/min}$
- ☒ D. Epidural anesthesia with a sympathetic blockade level to T6
- E. Systemic and renal artery calcium channel blockade

63. Hypotension during or after carotid artery surgery may be caused by:

- ☒ A. Stroke after carotid endarterectomy
- B. Intraoperative denervation of the carotid sinus
- C. Intraoperative denervation of the carotid body
- ☒ D. Plaque removal from the region of the carotid baroreceptors
- E. Intraoperative transection of the recurrent laryngeal nerve



- 34
64. A true statement about the Univent bronchial blocker tube is
- A. It is more difficult to place than a conventional double-lumen tube
  - B. It is recommended that the tube be changed to a single-lumen tube for postoperative ventilation
  - C. The tube allows for rapid deflation of the selected lung
  - D. The bronchial blocker lumen is rarely blocked by secretions
  - ☒ E. Single lobes may be collapsed instead of an entire lung

65. A patient presents for excision of a bronchopleural cutaneous fistula. Which mode of intubation will most effectively achieve lung separation?

- A. Single-lumen endotracheal tube
- B. Single-lumen endotracheal tube and bronchial blocker
- C. Endobronchial intubation with a single-lumen tube
- D. Spontaneous mask ventilation
- ☒ E. Double-lumen endotracheal tube

- 54
66. Causes of pulmonary dysfunction after acute spinal cord transection in the cervical region include all the following EXCEPT:

- TICP
- A. Impaired alveolar ventilation
  - B. Cervical cord transection in the C3-C4 region, which leads to diaphragmatic paralysis with apnea and death
  - ☒ C. Neurogenic pulmonary edema
  - D. Greatly diminished vital capacity
  - E. Restrictive lung changes that lead to an inability to clear bronchial secretions

- 33
67. Treatment of a venous air embolus includes all the following EXCEPT:

- D
- A. Irrigation of the operative site by the surgeon and application of bone wax to all bone edges to seal open vessels
  - B. Discontinuation of nitrous oxide ( $N_2O$ ) if it is being used and increasing the  $F_{IO_2}$  to 1.0
  - C. Attempting to aspirate the venous air embolus from the right heart via a central line
  - ☒ D. Administration of mannitol 0.25 g/kg both to decrease intracranial pressure and for renal protection
  - E. Support of the cardiovascular system with fluid administration and an inotrope if necessary

- 69 72. Normal fetal circulation is characterized by all the following EXCEPT:
- A. High pulmonary vascular resistance
  - B. Low systemic vascular resistance
  - C. Right-to-left shunting of blood through the foramen ovale
  - ☒ D. Right-to-left shunting of blood through a ventricular septal defect that closes functionally soon after delivery
  - E. Right-to-left shunting of blood via the ductus arteriosus

- 52 73. Onset of spontaneous ventilation at birth causes all the following EXCEPT:
- A. A decrease in pulmonary vascular resistance
  - B. An increase in systemic vascular resistance
  - C. An increase in left atrial pressure with a functional closure of the foramen ovale
  - ☒ D. Anatomic closure of the foramen ovale 1 month after birth
  - E. Functional closure of the ductus arteriosus 10 to 15 h after birth

74. In comparing two different measurements, what percentage of the data pairs will fall within two standard deviations of the differences, assuming a normal distribution?
- A. 50 percent
  - B. 68 percent
  - C. 87 percent
  - ☒ D. 95 percent
  - E. 99 percent

- 31 75. The intracranial pressure (ICP):
- A. Is normally less than 20 mm Hg in humans
  - ☒ B. Will remain constant until the intracranial volume reaches a certain value following which a small increase in intracranial volume will lead to a steep increase in intracranial pressure
  - C. When increased, will lead to a proportional increase in cerebral perfusion pressure
  - D. Increases when CSF volume decreases
  - E. Decreases following vasodilatation

GOOD LUCK



17 1. All the following effects make thiopental a useful agent in neuroanesthesia EXCEPT:

- A. Decrease the CMR
- B. Decrease the CBF
- ☒ C. Decrease the MAP
- D. Produce isoelectric brain protection
- E. Decrease elevated ICP

13 2. The total volume of cerebrospinal fluid in the adult is:

- A. 10 to 20 ml
- B. 20 to 40 ml
- C. 40 to 60 ml
- D. 60 to 100 ml
- ☒ E. 120 to 150 ml

31 3. The cerebral perfusion pressure can be calculated using the following formula:

- A. Systolic arterial pressure minus intracranial pressure
- B. Intracranial pressure minus mean arterial pressure
- C. Intracranial pressure minus central venous pressure
- ☒ D. Mean arterial pressure minus intracranial pressure
- E. Systolic arterial pressure minus intracranial pressure

14 4. Concerning autoregulation, which statement is TRUE:

- A. The cerebral autoregulation curve is shifted to the left in patients with chronic hypertension
- B. CBF remains nearly constant between mean arterial blood pressures of about 80 and 180 mmHg
- ☒ C. Pressures beyond the upper limit value may disrupt the blood-brain barrier
- D. Antihypertensive therapy cannot restore cerebral autoregulation limits toward normal
- E. Decreases in cerebral perfusion pressure result in cerebral vasoconstriction

58 5. Which method is the most effective in protecting the brain against focal and global ischemia:

- A. Propofol
- B. Barbiturates
- C. Etomidate
- D. Isoflurane
- ☒ E. Hypothermia

29

6. A decreased maximum amplitude on thromboelastography (TEG) is diagnostic of:

TEG

ITP

- A. Thrombocytopenia
- B. Hypercoagulable state
- C. Coagulation factor deficiencies
- D. Heparinization
- E. Warfarin use

7. With an oxygen saturation of 90%, a hemoglobin level of 10g/dl, a  $PaO_2$  of 60 mm Hg and a cardiac output of 3 l/min, the oxygen delivery is:

- A. 250 ml/min
- B. 360 ml/min
- C. 450 ml/min
- D. 660 ml/min
- E. 800 ml/min

$$DO_2 = CO \times 1.36 \times Hb \times SaO_2 + CO \times 0.003 \times PaO_2$$

$$= 3 \times 1.36 \times 10 \times 0.9 + 3 \times 0.003 \times 60$$

$$= 35.22 + 0.54 = 35.76 \text{ l/min}$$

25

8. All the following mechanisms are compensatory mechanisms during normovolemic anemia EXCEPT:

- A. Increased cardiac output
- B. Increase in regional blood flows
- C. Decrease in  $SvO_2$
- D. Increase in 2,3-DPG
- E. Tachycardia

71

9. The coagulation factor that has the shortest half-life is:

- A. Factor II
- B. Factor VII
- C. Factor IX
- D. Factor VIII
- E. Vitamin K-dependent factors

30

10. Perioperative screening tests including platelet count, prothrombin time, activated partial thromboplastin time and thrombin time will be likely to miss coagulation problems related to which of the following conditions:

- A. Uremia
- B. Preeclampsia
- C. Liver cirrhosis
- D. Hypersplenism
- E. Massive transfusion



27 11. Concerning the bleeding time, all the following statements are false EXCEPT:

- A. BT is a reliable predictor of perioperative blood loss
- ☒ B. BT is a reliable predictor of epidural hematoma in patients treated with antiplatelets and receiving epidural analgesia
- C. It is commonly used in the intra and postoperative period
- ☐ D. When prolonged, a normal aPTT does not exclude a diagnosis of von Willebrand's disease
- E. BT is not prolonged in the presence of uremia

12. A motor unit is an entity formed from:

- ☒ A. One neuron and many muscle fibers
- B. Many neurons and many muscle fibers
- C. Many neurons and one muscle fiber
- D. Multiple muscle fibers
- E. Multiple neurons

13. The mature form of the acetylcholine receptor contains all subunits EXCEPT:

- A.  $\delta$  delta
- B.  $\alpha$  alpha
- C.  $\beta$  beta
- ☒ D.  $\gamma$  gamma
- E.  $\epsilon$  etha

14. Under resting conditions the electrical potential of the inside of a nerve cell is:

- A. -120 mV
- B. -90 mV
- ☒ C. -70 mV
- D. -40 mV
- E. -30 mV

15. Available nerve stimulators usually deliver impulses lasting:

- ☒ A. 0.2 msec
- B. 0.3 msec
- C. 0.4 msec
- D. 0.5 msec
- E. 0.6 msec

25 16. All the following values increase during pregnancy EXCEPT:

- A. Oxygen consumption
  - B. Minute ventilation
  - ☒ C. PaCO<sub>2</sub>
  - D. Cardiac output
  - E. Respiratory rate
- 30 mmHg

70 17. The likelihood of placing an epidural catheter in a vein during pregnancy is:

- A. Equal to the general population
- B. Lower than the general population
- ☒ C. Higher than the general population
- D. Lower during uterine contractions
- E. Not affected by uterine contractions

9 18. The normal fetus at term:

- A. Can survive a longer period of total oxygen deprivation than the expected 2min
- B. Can survive a shorter period of total oxygen deprivation than the expected 2min
- C. Can survive the same period of total oxygen deprivation than the expected 2min
- ☒ D. Lacks adaptive mechanisms against hypoxia
- E. Has an oxygen dissociation curve shifted to the right

55 19. Well oxygenated blood from the placenta to the umbilical vein has a PaO<sub>2</sub> of:

- A. 20 mmHg
- B. 30 mmHg
- ☒ C. 40 mmHg
- D. 50 mmHg
- E. 60 mmHg

26 20. Factors that prolong labor and/or increase the likelihood of cesarean section include all of the following EXCEPT:

- ☒ A. Primigravida
- B. Large baby
- C. Small pelvis
- D. Fetal malpresentation
- ☒ E. Epidural analgesia



8 21. Anatomic closure of the ductus arteriosus does not usually occur until:

- A. 2-3 hours
- B. 2-3 days
- ☒ C. 2-3 weeks
- D. 2-3 months
- E. 1 year

*cardio*

23 22. All the following drugs or conditions may cause QT prolongation EXCEPT:

- A. Ondansetron
- ☒ B. Hypermagnesemia
- C. Droperidol
- D. Tricyclic antidepressants
- E. Halogenated agents

*cardio*

-5- 23. All the following conditions are markers of heart disease EXCEPT:

- A. Left bundle branch block
- ☒ B. Right bundle branch block
- C. Left anterior hemiblock
- D. Second degree A.V block
- E. Third degree A.V block

*cardio*

7 24. Digoxin is contraindicated in the presence of:

- A. Atrial flutter
- B. Atrial fibrillation
- C. Congestive heart failure
- ☒ D. Wolf Parkinson White Syndrome
- E. Left bundle branch block

*cardio*

24 25. Causes of ST segment elevation include all of the following EXCEPT:

- ☒ A. Subendocardial ischemia
- B. Ventricular aneurysm
- C. Acute transmural injury
- D. Cocaine abuse
- E. Acute pericarditis

*cardio*

6 26. The pacemaker rate of the AV junction is:

- A. 15-30 bpm
- B. 20-40 bpm
- ☒ C. 40-60 bpm
- D. 60-80 bpm
- E. 80-100 bpm

53 27. Septal MI induces changes in:

- ☒ A. V1-V2
- ☒ B. V3-V4
- C. I, AVL, V6
- D. II, III, AVF
- E. Tall R in V1

59 28. Concerning a flow-volume loop of a patient with an obstructive lung disease, which statement is correct:

- A. Marked increased peak expiratory flow
- ☒ B. Scooped out appearance of the expiratory curve
- C. Flattened expiratory curve
- D. Normal peak expiratory flow
- E. None of the above

52 29. A traditional diagnostic gas to measure diffusing capacity is:

- A. Oxygen
- B. Nitrous oxide
- C. Carbon dioxide
- ☒ D. Carbon monoxide
- E. Helium

72 30. Each of the following is decreased in elderly patients compared with their younger counterparts EXCEPT:

- A. PaO<sub>2</sub>
- B. FEV<sub>1</sub>
- C. Ventilatory response to hypercarbia
- D. Vital capacity
- ☒ E. Closing volume



- 50 31. Concerning distribution of ventilation, which statement is NOT correct:
- A. Regardless of body position, alveolar ventilation is unevenly distributed in the lungs
  - ☒ B. All areas of the lungs are ventilated equally
  - C. The right lung receives more ventilation than the left one
  - D. The lower areas of both lungs tend to be better ventilated than do the upper areas
  - E. Pleural pressure decreases about 1 cm H<sub>2</sub>O (becomes less negative) per cm decrease in lung height

- 68 32. What is the PaO<sub>2</sub> of air in a patient with a barometric pressure of 630 mmHg, respiratory quotient of 0.8 and PaCO<sub>2</sub> of 34 mmHg:

- A. 40 mmHg
- B. 50 mmHg
- C. 60 mmHg
- ☒ D. 70 mmHg
- E. 80 mmHg

$$(630 - 47) \times 0.21 = \frac{126.3 - 11.2}{0.8} = 157.6$$

Handwritten calculations:  $630 \times 0.21 = 132.3$ ,  $132.3 - 11.2 = 121.1$ ,  $121.1 / 0.8 = 151.4$

- 51 33. The venous admixture in normal individuals is typically less than:

- A. 40%
- B. 30%
- C. 20%
- D. 10%
- ☒ E. 5%

- 65-75 34. Concerning reabsorption at the proximal tubule, which statement is NOT correct:

- ☒ A. Only 25% of the ultrafiltrate formed in Bowman's capsule is normally reabsorbed isototically in the proximal renal tubules
- B. The major function of the proximal tubule is Na<sup>+</sup> reabsorption
- C. Angiotensin II and Norepinephrine enhance Na<sup>+</sup> reabsorption in the early proximal tubule
- D. Dopamine decreases the proximal reabsorption of sodium via D1-receptor activation
- E. Sodium reabsorption is coupled with the reabsorption of other solutes and the secretion of H<sup>+</sup>

$$P_{aO_2} = P_{aO_2} + P_{aO_2} - 10 + P_{aO_2}$$
$$P_{aO_2} - P_{aO_2} = 10 + P_{aO_2}$$
$$P_{aO_2} = 10 + P_{aO_2}$$

22

40. Concerning the atrial pressure tracings, which statement is NOT correct:

- A. The a wave is due to atrial systole
- B. The c wave coincides with ventricular contraction
- ☒ C. The v wave is the decline in pressure to a pulling down of the atrium by ventricular contraction
- D. Incompetence of atrioventricular valve results in a prominent c wave
- E. y descent represents the decline in atrial pressure as the AV valve opens

21

41. In a normal person what percent of the cardiac output is dependent on the "atrial kick?"

- A. 10-20%
- ☒ B. 20-30%
- C. 30-40%
- D. 40-50%
- E. 50-60%

46

42. Diastolic pressure is predominantly due to:

- A. The pumping action of the heart
- ☒ B. The quantity of blood in the arterial system
- C. The peripheral resistance plus the elasticity of the arterial vessels
- D. The viscosity of the blood
- E. The pulse rate

65

43. The percentage of oxygen the myocardium normally extracts in arterial blood is:

- A. 25%
- B. 35%
- C. 45%
- ☒ D. 65%
- E. 75%

45 44. Which of the following statements concerning postspinal headache is TRUE:

- A. CSF leukocytosis occurs
- B. Intravenous caffeine therapy is more effective than epidural blood patch
- ☒ C. The incidence decreases with age
- D. The incidence is higher in males than females of all ages
- E. The incidence is the same after single or multiple dural punctures

63 45. Concerning digitalis toxicity, all the following are true EXCEPT:

- A. Occurs on average in more than 15% of patients taking the drug
- ☒ B. Occurs less frequently in patients treated with thiazide diuretics
- C. Can manifest as a gastrointestinal upset
- D. Can manifest as a fatal arrhythmia without previous warning
- E. Makes treatment of patients with isoprenaline hazardous

73 46. The beta actions of adrenaline include all the following EXCEPT:

- A. Dilatation of bronchus
- B. Increase in the rate of cardiac contraction
- ☒ C. Decrease in the force of cardiac contraction
- D. Constriction of arterioles in the skin
- E. Increased glycogenolysis in skeletal muscles

44 47. In the control of respiration:

- ☒ A. Hypoxic drive originates in the peripheral chemoreceptors
- B. There is no significant hypoxic drive in the normal subject breathing air at sea level
- C. The response to CO<sub>2</sub> is not linear over the normal range
- D. The increased drive in exercise is due to incomplete oxygen equilibration in the pulmonary capillaries
- E. The gasping respiration of shock is a baroreceptor reflex

64 48. Compared with intracellular fluid, the extracellular fluid contains a greater concentration of:

- A. Potassium
- B. Magnesium ions
- C. Protein
- D. Hydrogen
- ☒ E. Bicarbonate ions



- 47 49. Which of the following is TRUE of rupture of the bladder?
- A. Most cases are consequent of urinary retention
  - B. The patient has a painful desire to pass urine
  - C. Intravenous pyelography is a useful investigation
  - D. The patient should be catheterized with a small catheter prior to surgery
  - E. The need for surgery is not urgent

- 42 50. Concerning postoperative retention of urine, all the following are true EXCEPT:
- A. Is particularly common after haemorrhoidectomy
  - B. Is likely to follow spinal anaesthesia
  - C. Is common in men
  - D. May be treated initially with a single dose of furosemide
  - E. Is frequently painful

- 41 51. The use of large quantities of isotonic non-electrolyte containing solutions for irrigation during prolonged TURP results in all the following EXCEPT:
- A. Hyponatraemia
  - B. Haemolysis
  - C. Haemodilution
  - D. Hypoalbuminaemia
  - E. Hypoglycaemia

- 71 52. Regarding rocuronium, all the following are true EXCEPT:
- A. Metabolized by hydroxylation
  - B. Excreted only by bile
  - C. Maximal block in 1.5 to 3 minutes
  - D. Can be used for rapid sequence induction
  - E. ED 95 is 0.3 mg/kg

- 62 53. All the following factors can affect neuromuscular block EXCEPT:
- A. Hypovolaemia
  - B. Myasthenia gravis
  - C. Sepsis
  - D. Renal disease
  - E. Myotonias

20 54. All the following drugs can cause methaemoglobinemia EXCEPT:

- A. Benzocaine
- B. Nitroglycerine
- C. Prilocaine
- D. Cocaine
- E. Sodium nitroprusside

3 55. Concerning the stress response to surgery, ONE is TRUE:

- A. Occurs mainly during operation
- B. Can not be obtunded by high dose opioid
- C. Is completely eliminated by effective thoracic epidural analgesia
- D. Is beneficial for postoperative recovery
- E. Promotes postoperative catabolism

40 56. Concerning opioids, all the following are true EXCEPT:

- A. Meperidine may lead to increase in heart rate
- B. Meperidine may depress cardiac contractility
- C. The remifentanyl metabolite is completely inactive
- D. Morphine-6- glucuronide is more potent than morphine
- E. The muscle rigidity is due to mu-receptor activation

19 57. All the following are characteristics of paediatric patient compared to adult patient EXCEPT:

- A. Relatively large tongue
- B. Cardiac output is heart rate dependant
- C. Increased vagal tone
- D. Increased lung compliance
- E. Increased airway resistance

4 58. Which of the following statements correctly describe CMRO<sub>2</sub> in the brain? (60%)

- A. 90% of it is used to generate ATP for brain electrical activity
- B. It averages 3-3.8 ml/100gm/hour
- C. Equals zero when the EEG is isoelectric
- D. It is greatest in the white matter of the cerebral cortex
- E. It does not always parallel brain glucose consumption

Correctly  
Cultured  
M. J. J.

18 59. All the following associations are correct EXCEPT:

- B
- A. Adrenal medulla and catecholamines
  - B. Insulin and catabolism
  - C. Secondary aldosteronism and increased rennin activity
  - D. Carcinoid tumors and right sided heart disease
  - E. Hyperthyroidism and atrial fibrillation

16 60. During quiet inspiration, movement of the diaphragm accounts for:

- C
- A. 40% of the intrathoracic volume
  - B. 60% of the intrathoracic volume
  - C. 75% of the intrathoracic volume
  - D. 90% of the intrathoracic volume
  - E. 100% of the intrathoracic volume

39 61. At a height of 5500 meters the barometric pressure is 380 mmHg, the partial pressure of O<sub>2</sub> at that level is approximately:

- D
- A. 70 mmHg
  - B. 55 mmHg
  - C. 60 mmHg
  - D. 85 mmHg
  - E. 90 mmHg
- Handwritten calculations:  $380 \times 0.21 = 79.8$

62. All the following are causes of increased Q-T interval in the postoperative period EXCEPT:

- B
- A. Ischaemic heart disease
  - B. Digoxin
  - C. Hypocalcaemia
  - D. Myocarditis
  - E. Anti-arrhythmic drugs

63. All the following will reduce mortality in postoperative patients who develop acute myocardial infarction EXCEPT:

- 7
- A. Thrombolytic therapy commenced soon within 24 hours of acute infarction
  - B. Intravenous atenolol or metoprolol
  - C. Thoracic epidural analgesia
  - D. Aspirin
  - E. Glyceryl trinitrate



- 38 64. One of the following is an effect of insulin:
- A. Decreases fatty acid synthesis
  - B. Inhibition of lipoprotein lipase
  - C. Decrease protein synthesis in ribosomes
  - D. Increase ketogenesis
  - E. ☒ Increase triglyceride deposition

65. The life span of platelets after transfusion averages:
- A. ☒ 3 days *1-7 days*
  - B. 10 days
  - C. 21 days
  - D. 90 days
  - E. 180 days

- 37 66. The basal metabolic rate as used in clinical medicine is calculated from the:
- A. Amount of CO<sub>2</sub> liberated during an interval of 8-10 minutes
  - B. Rate and depth of respiration at rest as recorded in a spirogram
  - C. Amount of O<sub>2</sub> consumed per hour per square meter of body surface
  - D. ☒ Relationship of consumed O<sub>2</sub> to CO<sub>2</sub> released per unit of time
  - E. Amount of O<sub>2</sub> consumed as corrected to temperature

67. Each of the following conditions is a likely trigger for DIC EXCEPT:
- A. ☒ Dissecting aortic aneurysm
  - B. Abruptio placenta
  - C. ☒ Prostatic surgery
  - D. Amniotic fluid embolism
  - E. Transfusion of incompatible blood

- 2 68. Complications of TPN include all of the following EXCEPT:
- A. Hypoglycaemia
  - B. Hyperglycaemic hyperosmolar coma
  - C. Deficient immune response
  - D. Acute respiratory failure
  - E. ☒ Low 2-3 DPG

36 69. In hyperkalaemic-induced arrhythmias, the first drug of choice is:

- A. Bicarbonate
- B. Glucose-insulin
- ☒ C. Calcium
- D. Potassium exchange resin
- E. Hydrocortisone

59 70. Concerning the application of PEEP, all the following are true EXCEPT:

- A. Increases the incidence of survival in ARDS
- ☒ B. Reduces lung water content
- C. Decreases dead space
- D. Causes humorally mediated depression of cardiac output
- E. Is contraindicated when intracranial pressure is elevated

71 71. Administration of which of the following is the most important initial therapy in the management of patient with septic shock?

- A. Vasopressors
- B. Inotropic agents
- C. Diuretics
- D. Corticosteroids
- ☒ E. Intravenous fluid

75 72. Which of the following evaluation of the adequacy of CPR correlates with survival?

- A. ABGs
- B. Carotid pulsation during chest compression
- C. Pupillary signs
- ☒ D. ETCO<sub>2</sub>
- E. CVP

76 73. In a patient with ARDS who is being mechanically ventilated, which of the following findings indicates the most severe disease?

- A. Decreased FRC
- B. Decreased lung compliance
- ☒ C. Hypercarbia
- D. Hypoxaemia
- E. Increased dead space

35. Which of the following would most likely increase the duration of seizures during ECT using thiopentone and succinylcholine for general anaesthesia?

- ☐ A Administration of atropine prior to ECT
- ☐ B Changing to benzodiazepine for induction of anaesthesia
- ☒ C Changing to etomidate for induction of anaesthesia
- ☐ D Adding phenytoin to preoperative medication
- ☐ E Decreasing the dose of barbiturate used for induction of general anaesthesia

36. In day case surgery using the LMA:

- ☐ A Is contraindicated for tonsillectomy because of the risk of aspiration
- ☐ B Requires direct laryngoscopy for its insertion
- ☐ C Provides a worse airway than a face mask
- ☒ D Is better tolerated by patients than an endotracheal tube
- ☐ E Causes more sore throats than an endotracheal tube

37. The major advantage for doing surgery in paediatric patients on day-case basis is:

- ☐ A Reduction of cost of medical care
- ☐ B Offering surgical care comparable to that received by inpatients
- ☒ C Reduction in rate of infection and separation anxiety in the child
- ☐ D Increasing availability of hospital beds
- ☐ E Reduction in the days of leave and absence among school children

38. All the following are indications for sedation or general anaesthesia in ambulatory dental patients EXCEPT:

- ☐ A Young children with multiple extractions
- ☒ B Elderly patients with heart disease
- ☐ C Previous faint reaction under local anaesthesia alone
- ☐ D Epileptic patient
- ☐ E Extremely nervous patient



39. A patient with lumbar disk disease requires lumbar epidural injection of a corticosteroid for control of low back pain. Which of the following statements concerning this treatment is TRUE?

- A Maximum effect occurs one hour after injection
- B Maximum effect occurs when drug concentration peaks in CSF
- ☒ C Maximum effect occurs during the acute phase of the disk disease
- D The beneficial effect results primarily from sympathetic neurolysis
- E It is contraindicated if the patient has had prior surgical procedure on the lumbar disks

40. Concerning fibrin degradation products, all the following are true EXCEPT:

- A Are highly suggestive of DIC
- B Are high in trauma
- C Associated with venous thrombo-embolic disease without DIC
- D They do not increase in patients with liver disease
- ☒ E Their level are dependent on renal and hepatic function

41. Concerning hospital acquired pneumonia, all the following are true EXCEPT:

- A Is defined as an infection of the lungs occurring more than 48 hours after admission
- B Is a significant problem
- ☒ C Is easy to differentiate from community acquired pneumonia
- D Is associated with resistant organism
- E Early onset is better than late onset

42. Miosis, incontinence, excess salivation and convulsions are toxic effects of:

- A Amphetamines
- B Phenothiazines
- C Cocaine
- ☒ D Organophosphate insecticides
- E Tricyclic antidepressants

43. The most effective treatment of severe carbon monoxide poisoning in a 2 years old child is:

- A Intravenous administration of methylene blue
- B Intravenous administration of thiocyanate
- C Intravenous administration of thiosulfate
- D Exchange transfusion
- ☒ E Hyperbaric oxygenation

14. Complications of Total Parenteral Nutrition (TPN) include all the following EXCEPT:

- ☐ A Hypoglycaemia *HYPER*
- ☐ B Hyperglycaemic hyperosmolar coma *Brain Hall*
- ☐ C Deficient immune response *hypophosphatemia Cholest*
- ☐ D Acute respiratory failure *metabolic Acidosis*
- ☒ E Low 2,3-DPG level *hypernatraemia Vitamine deficiency*

45. Concerning the application of PEEP, all the following are true EXCEPT:

- ☐ A Increases the incidence of survival in ARDS
- ☒ B Reduces lung water content
- ☐ C Increases dead space *with Super PEEP*
- ☐ D Causes depression of cardiac output
- ☐ E Is contraindicated in patients with elevated ICP

46. Increased bilirubin in the urine in a jaundiced patient is likely in the following conditions EXCEPT:

- ☐ A Metastatic carcinoma in the liver
- ☒ B Obstruction of the bile ducts
- ☐ C Acute haemolysis
- ☐ D Infective hepatitis
- ☐ E Chlorpromazine cholestatic jaundice

47. Concerning Malignant Hyperthermia (MH), all the following are true EXCEPT:

- ☐ A Masseter muscle spasm is one of the most common manifestation of MH
- ☐ B Dantrolene has the potential to cause respiratory failure when used to treat MH
- ☐ C MH can reappear during apparently effective dantrolene therapy
- ☒ D Calcium channel blockers such as verapamil may be used to treat arrhythmias occurring in MH only if dantrolene is used *Brain Hall*
- ☐ E The plasma half life of dantrolene is 10-15 hours

48. Concerning high risk surgical patients, all the following are true EXCEPT:

- ☐ A Pulse rate and blood pressure are unreliable indications of end organ perfusion
- ☐ B Ability to increase oxygen delivery is associated with survival
- ☐ C Beta adrenergic blockade is associated with improved survival
- ☐ D Oesophageal Doppler monitoring of fluid administration leads to decreased length of stay in hospital
- ☒ E The type of fluid administered has no influence on organ perfusion



49. All the following conditions do not require immediate surgical intervention in neonates EXCEPT:

- A Necrotizing enterocolitis
- B Congenital diaphragmatic hernia
- C Pyloric stenosis ✓
- D Imperforate anus
- E ☒ Gastroschisis

check this  
M GH

50. Concerning paediatric cardiopulmonary resuscitation, ONE is TRUE:

- A CPR should be conducted by two rescuers at a ratio of ventilation/compression of 5/1
- B ☒ An LMA can be used to secure the airway
- C Sodium bicarbonate can not be administered by the intraosseous route
- D Survival from out of hospital cardiac arrest is much better than in adults
- E Adrenaline should be given every 3 minutes in asystole

51. Resectional pulmonary surgery is probably contraindicated if:

- A Resting PaO<sub>2</sub> on room air is 88 mm Hg
- B ☒ Resting PaCO<sub>2</sub> is 52 mm Hg
- C FEV<sub>1</sub> is 80% of predicted
- D MVV is less than 75% of predicted
- E Patient is dyspneic after climbing three flights of stairs

52. In the anesthetized paralyzed patient in the lateral decubitus position, with the chest open:

- A The dependent lung receives relatively less perfusion
- B The nondependent lung receives relatively more perfusion
- C ☒ The dependent lung remains relatively poorly ventilated
- D The nondependent lung will be hyperventilated
- E Both lungs will be better ventilated

53. The most common cause of congestive heart failure in the elderly is:

- A Coronary artery disease
- B ☒ Hypertension
- C Diastolic dysfunction
- D Systolic dysfunction
- E Idiopathic cardiomyopathy



54. The best evidence to support a perioperative myocardial infarction includes all of the following EXCEPT:

- ☐ A New Q waves on ECG
- ☒ B Tachycardia
- ☐ C Segmental wall motion abnormalities by 2-D echocardiography
- ☐ D Creatine kinase-MB fraction present
- ☐ E Troponin I present

55. The most important factor determining the hematocrit after the initiation of cardiopulmonary bypass (CPB) is:

- ☐ A Pre-CPB hematocrit
- ☒ B Red cell mass
- ☐ C Pre-CPB fluids
- ☐ D Pre-CPB renal function
- ☐ E Pump prime volume

MGT

56. Reducing the inflammatory response to cardiopulmonary bypass can be accomplished by

- ☒ A Aprotinin
- ☐ B Steroids
- ☐ C High-dose opiates
- ☐ D Antihistamines
- ☐ E Prostaglandin inhibitors

MGT

57. Probably the most reliable method for monitoring cerebral blood flow during carotid endarterectomy is:

- ☒ A Carotid artery stump pressures
- ☐ B Processed electroencephalogram
- ☐ C Unprocessed electroencephalogram
- ☐ D Jugular venous oxygen saturation
- ☒ E Somatosensory evoked potentials

MGT

transcranial Doppler

58. The optimal site for the placement of a single arterial catheter for proximal blood pressure monitoring during descending thoracoabdominal aneurysm repair is the:

- ☐ A Right femoral artery
- ☐ B Left radial artery
- ☐ C Left axillary artery
- ☒ D Right radial artery
- ☐ E Left femoral artery

MGT

59. The neurosurgeon says the brain is "tight" when he opens the dura for craniotomy for a tumor. A maneuver that would NOT improve this situation is :

- A Hyperventilating to PaCO<sub>2</sub> of 25 mm Hg ✓
- B Discontinuing inhalation agents and changing to an opioid barbiturate base anaesthesia ✓
- ☒ C Rotating the head laterally and applying PEEP to improve cerebral blood flow and oxygenation ✓
- D Draining spinal fluid through a lumbar catheter
- E Ensuring profound muscular relaxation with vecuronium

60. In an average 70-Kg person, the normal CBF is :

- A 75 mL/100 g/min
- B 1200 mL/min
- ☒ C 50 mL/100 g/min → brain is 15% of body (1.5L) = 50 x 15 = 750
- D 120 mL/100 g/min → for 70 mL/min
- E 250 mL/100 g/min

61. When cerebral autoregulation is disturbed (head injury) :

- ☒ A CBF is PaCO<sub>2</sub> level dependent
- ☒ B CBF is regulated by adrenergic nervous system
- ☒ C CBF is dependent on arterial blood pressure \*
- ☒ D CBF is regulated by cerebral metabolic rate
- E CBF is well preserved \*

62. All the following drugs have a role in brain protection EXCEPT :

- A Barbiturates
- B Propofol
- ☒ C Ketamine
- D Etomidate
- E Nimodipine

63. The Glasgow Coma Score is based on :

- A Assessment of pupil size
- B Assessment of respiration
- C Assessment of heart rate and rhythm
- ☒ D Response to eye opening and motor and verbal response.
- E Assessment of tendon reflexes



64. Control of ICP during induction includes all of the following EXCEPT

- A Thiopental
- B Narcotic
- ☒ C Sodium nitroprusside
- D Nondepolarizing muscle relaxant
- E Short-acting beta blocker

65. Factors contributing to oliguria during general anaesthesia include all of the following EXCEPT:

- ☒ A Increased concentration of vasopressin
- B Increased concentration of aldosterone
- C Hypotension
- D Hypovolemia
- ☒ E Administration of aminoglycoside antibiotics

66. Effects of hyponatremia  $< 115$  mEq/L include all of the following EXCEPT:

- A Seizures
- ☒ B Narrowing of the QRS complex
- C Confusion
- ☒ D Depressed myocardial contractility
- E Cardiac Dysrhythmias

67. Treatment of the TURP syndrome includes all of the following EXCEPT:

- ☒ A Mannitol 50 gm IV
- ☒ B Furosemide 20 mg IV
- C Supplemental oxygen
- D Hypertonic saline
- E Anticonvulsant

68. An antihypertensive agent that should be avoided in patients with end-stage renal disease is:

- A Trimethaphan
- ☒ B Sodium nitroprusside
- C Nitroglycerin
- D Propranolol
- E Nifedipine



69. Electrolyte changes that occur secondary to chronic renal failure include all of the following EXCEPT:

- A Hyperkalemia
- B Hypercalcemia
- C Hypermagnesemia
- D Metabolic acidosis
- E Hyperphosphatemia

70. Which of the following drugs is best for rapid sequence intubation in a patient with renal failure?

- A High-dose vecuronium
- B High-dose atracurium
- C Priming dose vecuronium
- D Rocuronium *RC Rapid Onset*
- E Succinylcholine

71. The most common cause of death in patients with CRF is:

- A Anesthesia related
- B Sepsis
- C Uremia
- D Anemia
- E Coronary artery disease

72. In a transplanted heart, which of the following drugs is least effective in increasing the heart rate?

- A Isoproterenol
- B Epinephrine
- C Dobutamine
- D Dopamine
- E Atropine ???

73. A 12-kg, one-year-old infant is undergoing an emergency laparotomy for intussusception. He has had an IV in place for one day and has a good urine output. What should the rate of infusion be during the surgical procedure?

- A 60 mL/hr
- B 80 mL/hr
- C 100 mL/hr
- D 120 mL/hr
- E 160 mL/hr

He  
M ai

1. Concerning airway resistance, ONE is TRUE:
- A. May be measured using whole body plethysmography
  - B. Is independent of lung volume (*dependent*)
  - C. Is increased by isoflurane
  - D. Is increased by ketamine
  - E. The major site is the terminal bronchioles *medium size*

2. Acclimatization to the hypoxia of high altitude results in all the following EXCEPT:

- A. Increased affinity of haemoglobin to oxygen
- B. Reduced arterial CO<sub>2</sub> level
- C. Increase in oxygen carrying capacity
- D. Increase in respiratory minute volume
- E. Increase in cardiac output

*↑ BP - ↓ vagus  
↓ sympathetic*

3. Stimulation of the high-pressure baroreceptors is associated with ONE of the following:

- A. An increase in cardiac contractility
- B. An increase in heart rate
- C. An increase in the discharge rate of vagal efferent cardiac neurons
- D. A decrease in systemic blood pressure
- E. Stimulation of the vasopressor centre *inhibition*

4. A 75 Kg adult male at rest has approximately:

- A. Total body water of 45 Litres
- B. Extracellular fluid of 10 Litres
- C. Body surface area of 1.7 m<sup>2</sup> *2-7-4x*
- D. Cardiac index of 6 Litres/min/m<sup>2</sup>
- E. Energy requirement of 1200 Kcal/day *20-30 K cal/day*

*ECF  
ICF 30-40  
1.7 m<sup>2</sup>  
6 L/min/m<sup>2</sup>  
20-30 K cal/day*

5. Regarding basal metabolic rate, all the following are true EXCEPT:

- A. Men and women have equal basal metabolic rates
- B. May be measured using spirometry
- C. Is higher in children than in adults
- D. Is subject to diurnal variation
- E. Is related to body surface area

74. A two-year-old patient presenting for elective repair of a bilateral inguinal hernia must be fasting, how long before surgery?

- A 3 hr for clear liquids, 4 hr for solids
- ☒ B 2 hr for clear liquids, 6 hr for solids
- C 3 hr for clear liquids, 8 hr for solids
- ☒ D 3 hr for clear liquids, 6 hr for solids
- E 2 hr for clear liquids, 4 hr for solids

75. Which of the following statements about neonatal temperature regulation is NOT true?

- A Brown fat is a major source of thermogenesis
- ☒ B The anterior hypothalamus responds to cold, the posterior hypothalamus responds to heat
- ☒ C Heat loss from an uncovered head can account for up to 60% of total heat loss
- D Temperature receptors are located in the skin, the CNS, and the GI tract
- E Temperature receptors are more sensitive to rapid changes than to gradual ones

GOOD LUCK



33 74. The most important procedure for preventing nosocomial pneumonia in a critically ill patient is:

- A. Hand washing  
B. Separate patient cubicles in the ICU  
C. Strict isolation of the patient  
D. Changing the ventilator circuit every 24 hours  
E. Prophylactic antibiotic administration

15 75. If a patient with chronic obstructive pulmonary disease is uncooperative during pulmonary function testing, the most accurate assessment of his disease will be derived from the

- A. Forced expiratory volume in 1 second  
B. Forced midexpiratory flow  
C. Forced vital capacity  
D. Maximal voluntary ventilation  
E. Peak flow rate

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6. Concerning first order kinetics all the following are true EXCEPT:

- A. May change to zero order kinetics if a large dose of the drug is administered.
- B. Plasma concentration of an intravenously administered drug decreases exponentially with time.
- C. The decline in the plasma concentration of a drug may be measured as a percentage of the concentration.
- D. The plasma half-life is inversely related to the dose of the drug.
- E. Elimination half-life is inversely related to elimination rate.

7. Concerning barbiturates, all the following are true EXCEPT:

- A. Sulfuration of barbiturates increases lipid solubility.
- B. Their protein binding parallels lipid solubility.
- C. They selectively depress transmission in the sympathetic ganglia.
- D. About 5% of injected thiopentone is excreted unchanged in the urine.
- E. Elimination half time of thiopentone is 11.6 hours.

8. Concerning expected changes in cardiovascular status after ketamine administration, ONE is TRUE:

- A. Elevated diastolic pressure, normal systolic pressure
- B. Elevated systolic and diastolic pressure
- C. Decreased diastolic and systolic pressures
- D. Decreased diastolic and increased systolic pressures
- E. No change in blood pressure

9. Concerning etomidate, all the following are true EXCEPT:

- A. Is useful in patients with limited cardiovascular reserve.
- B. It produces pain on injection.
- C. Is water soluble.
- D. It is not associated with allergic reaction.
- E. It produces excitatory movement.

*Absorbed & Suppression*

10. Concerning MAC of a volatile anaesthetic agent, all the following are true EXCEPT:

- A. Is a useful estimate of anaesthetic potency.
- B. Decreases with increasing body temperature.
- C. Increases with increasing atmospheric pressure.
- D. The MAC of halothane is lower than the MAC of isoflurane.
- E. Is related to the lipid solubility of the volatile anaesthetic.

*↓ hypothermia*

*↑ Body Temp*

*↑ atmospheric pressure*

*1/2 MAC*



6. Appropriate treatment of suspected myoglobinuria includes all of the following EXCEPT

- A. Alkalinizing the urine
- B. Mannitol iv
- C. Hydration
- D. Dopamine 3  $\mu\text{g/kg/min}$  iv
- E. Acidifying the urine

- Aim to ↑ urinary pH  
- main cause of acute hyaline  
2 urine output

7. Vitreous humor loss can result from coughing or straining during which type of ocular surgery?

- A. Scleral buckle
- B. Strabismus surgery
- C. Optic nerve sheath decompression
- D. Penetrating keratoplasty (pkp)
- E. Dacryocystorhinostomy (dcr)

8. Portal hypertension during the anhepatic phase of liver transplantation can be decreased by

Induced hypotension  
bleeding

veno-venous shunt

(11)

(12)

(13)

(14)

(15)

(16)



11. Concerning different modes of peripheral nerve stimulation, ONE is TRUE:

Brain Hall → *Handwritten note*

- A The degree of single twitch depression accurately calculates the level of neuromuscular block
- ☒ B Using Train Of Four, the number of elicited twitches indicates the degree of muscle blockade but not receptor occupancy
- ~~3-4 C~~ 1-2 twitches of TOF count is accepted value during anaesthesia and before reversal of neuromuscular blockade
- D Double burst stimulation consists of 2 bursts of 3 stimuli at 2 Hz (50 Hz)
- E TOF ratio is always one for depolarizing neuromuscular blocking agents

12. Concerning monitoring respiratory gas flows and volumes, all the following are true EXCEPT:

- A Gas flow can be used to derive volume
- B Laminar flow is described in Hagen-Poiseuille equation
- C Reynolds number is used to predict the type of flow (laminar or turbulent)
- ☒ D Pneumotachographs measure gas flow by inducing turbulent flow through a gauze screen
- E Respirometer measures gas flow in one direction

13. Concerning pulse-oximetry, all the following are true EXCEPT:

- ☒ A It provides a continuous, non invasive measurement of oxygen saturation
- ☒ B It utilizes the Lambert-Beer law
- ☒ C Measures light absorption by reduced and oxygenated haemoglobin
- ☒ D The pulsatile and nonpulsatile component of light absorption are measured at 2 wavelengths
- ☒ E Carboxyhaemoglobin, methaemoglobin, methylene blue and anaemia overestimate SaO<sub>2</sub>

14. All the following increase arterial to end-tidal CO<sub>2</sub> tension difference EXCEPT:

- A Addition of PEEP
- B Deliberate hypotension
- ☒ C Endobronchial intubation
- D Hypovolaemia
- E Pulmonary embolism

*Handwritten note: HIGH*



15. ONE of the following may lead to over-estimation of blood pressure:

- ☒ A Too wide a cuff
- ☒ B Too fat an arm and a standard cuff *Fat arm - standard cuff*
- ☒ C Letting the cuff pressure down too slowly
- ☒ D Having the sphygmomanometer above the patient
- ☒ E Severe atherosclerosis

16. Concerning postoperative nausea and vomiting (PONV), ONE is TRUE:

- ☒ A Rarely occur with spinal or epidural anaesthesia
- ☒ B Has the same incidence in men and women
- ☒ C Is more common in children
- ☒ D Is decreased with longer operation
- ☒ E Is increased by the use of dopamine antagonists

17. During laparotomy for a ruptured spleen, unexplained oozing occurs after infusion of 2 litres of crystalloid and 3 units of blood. The most likely cause is:

- ☒ A Citrate toxicity
- ☒ B Dilutional thrombocytopenia
- ☒ C Haemolytic transfusion reaction
- ☒ D Labile clotting factor deficiency
- ☒ E Cold agglutinin reaction

18. Concerning pregnant women, all the following are true EXCEPT:

- ☒ A Presence of cardiac symptoms such as dyspnoea, heart murmur and peripheral oedema are always pathological
- ☒ B ECG changes such as axis deviation, premature beats and ST segment abnormalities may be normal
- ☒ C Radiological investigations should be minimized, especially during the first trimester
- ☒ D Supine hypotensive syndrome occurs from the second trimester
- ☒ E In CPR, guidelines should be followed with left lateral tilt

19. Regarding surgery in pregnancy, all the following are true EXCEPT:

- ☒ A Elective surgery can be performed during pregnancy
- ☒ B Emergency can be performed irrespective of gestational age
- ☒ C Fetal function should be assessed before and after surgery
- ☒ D Surgery during the second trimester has less risk of teratogenicity and abortion
- ☒ E Elective surgery could be done 6 weeks postpartum

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20. Concerning the supine hypotensive syndrome in pregnancy, all the following are true EXCEPT:

- A Occurs in 11% of all pregnant patients of over 20 weeks of gestation on lying supine
- B Occurs more commonly in multiple pregnancies
- C Is exacerbated by the administration of epidural analgesia
- ☒ D Is avoided by the adoption of a 5 degrees lateral tilt. *is some time*
- E Is best avoided by uterine displacement to the left rather than to the right

21. Maternal hyperventilation will result in: *hypocap*

- A Increased umbilical blood flow
- B Decreased affinity of maternal haemoglobin for oxygen
- ☒ C Decreased maternal and fetal cardiac output
- ☒ D Increased placental transfer of oxygen
- E Increased fetal cerebral blood flow

22. Pain during the second stage of labour involves the following dermatomes:

- A T10-S4
- B T10-T12
- C T10-L2
- D L4-S2
- ☒ E S1-S4

23. Test dose is given at start of epidural block for labour pain for the following reason:

- A To detect efficacy of block
- B To assess initial dose
- ☒ C To verify site of catheter
- D To discover hypersensitivity to local anaesthetic
- E To determine height of block

24. Anaesthesia for evacuation of retained placenta causing severe post partum haemorrhage includes:

- A Spinal intrathecal anaesthesia
- B Epidural anaesthesia
- C General anaesthesia using laryngeal mask
- ☒ D Rapid sequence induction of general anaesthesia
- E Mask and oropharyngeal airway anaesthesia

25. In the elderly patient undergoing surgery for fracture neck of femur, all the following are associated with poorer outcome EXCEPT:

- A Increasing age
- B Intraoperative hypotension
- C High ASA status (3 & 4)
- ☒ D Renal insufficiency
- E Cardiac arrhythmias on the preoperative ECG

26. A 60 Kg, 17 years old girl with severe idiopathic scoliosis is scheduled for Harrington rod fixation. Which of the following respiratory parameters is compatible with this disorder? *Restrictive lung disease*

- ☒ A FEV1/FVC ratio is less than 50%
- ☒ B FVC less than 2000 ml
- ☒ C Intrapulmonary shunt less than 10%
- ☒ D Alveolar-to-arterial oxygen tension difference less than 100 mm Hg while breathing 100% oxygen
- ☒ E Normal pulmonary vascular resistance

27. With respect to postoperative apnoea in neonates, all the following are true EXCEPT:

- ☒ A The risk increases as post-conceptual age decreases
- ☒ B The risk increases as haemoglobin concentration decreases
- ☒ C The risk increases as duration of surgery increases
- ☒ D Episodes can be detected with oxygen saturation monitoring
- ☒ E It rarely occurs in term infants

28. With respect to foreign body aspiration in children, ONE is TRUE:

- ☒ A There is an equal likelihood of aspiration into right and left main bronchi
- ☒ B Chronic cough is a recognized presentation
- ☒ C A chest x-ray is useful in identifying the position of the foreign body
- ☒ D Inhalational induction of anaesthesia may be shortened
- ☒ E Maintenance of spontaneous respiration through out the extraction procedure is of paramount importance

29. Hypothermia in infants during operation is associated with all the following problems EXCEPT:

- ☒ A Cardiac irritability
- ☒ B Respiratory depression
- ☒ C Decreased pulmonary vascular resistance
- ☒ D Altered drug response
- ☒ E Delayed awakening from anaesthesia



30. Which of the following is most likely to occur during mediastinoscopy?

- A Chylothorax
- B Compression of the innominate artery
- C Injury to the superior laryngeal nerve
- D Tracheal tear
- E Venous air embolism

31. One of the following increases the risk of death and complications after cardiac surgery?

- A A serum creatinine concentration of 180  $\mu\text{mol/L}$
- B A history of femero-popliteal bypass
- C Class III angina requiring sublingual glyceryl trinitrate
- D A left ventricular ejection fraction of 55%
- E MI 6 months before surgery

32. Hypotension in the immediate post cardiac surgery is mainly due to:

- A Dehydration
- B Decreased intravascular volume
- C Drug reaction (especially to protamine)
- D Hypothermia
- E Anaemia

33. The core temperature is best measured in cardiac surgery in the:

- A Lower oesophagus
- B Nasopharynx
- C Bladder
- D Rectum
- E Pericardium

34. Concerning Glasgow Coma Scale (GCS), all the following are true EXCEPT:

- A Reliably predicts outcome after traumatic brain injury
- B Is a rapidly reproducible scoring system
- C Should only be used for traumatic brain injury
- D Predicts 50% mortality for GCS of  $<8$  in traumatic brain injury
- E More than 12 is classified as minor brain injury



11. Pethidine has more rapid onset of action than morphine following intravenous injection because of its :

- A. Lesser ionization
- ☒ B. Greater lipid solubility
- C. Lesser protein binding
- D. Smaller volume of distribution
- E. Slower rate of hepatic clearance

12. Concerning benzodiazepines, all the following are true EXCEPT :

- A. They enhance the binding of GABA to its receptors ✓
- B. They decrease ACTH plasma concentration ✓ *decrease release*
- C. Physostigmine and aminophylline are non-specific antagonists to their effects ✓
- ☒ D. Their skeletal muscle effect reflects their effect on the neuromuscular junction *not act on neuro-musc. junction*
- E. Their protein binding is 96-98% ✓

13. All the following are established treatment in acute asthmatic attack EXCEPT :

- A. Oxygen therapy ✓
- B. Steroids ✓
- C. Nebulized beta-agonists ✓
- ☒ D. Antihistamines
- E. Anticholinergics ✓

14. Concerning hydralazine, all of the following are true EXCEPT :

- A. It lowers blood pressure by vasodilatation ✓
- B. Vasodilating effect is greater on arterioles than veins ✓
- C. Pulmonary artery pressure may increase, *does depend*
- D. It may increase intracranial pressure ✓ *(potent)*
- ☒ E. It causes coronary vasoconstriction.

*relax precapillary sphincter - ↓ peripheral resistance*

*cause 2-4 hours duration*  
*↑ HR*  
*↑ N. centrally*  
*↑ CO*  
*↑ HD*  
*β-blocker*  
*Acetylation*  
*hydroxylation*  
*in liver*  
*↓ PVP*  
*CHF*

15. ONE of the following drugs would reduce the response to warfarine:

- A. Aspirin
- ☒ B. Barbiturates ⇒ *major inducer*
- C. Disulfiram
- D. Phenylbetazone
- E. Trimethoprim-sulphamethoxazole (inhibitor) - *Alcohol - amide*

*oral contraceptives*  
*carbamazepine*  
*OCB*

Adenosine receptor  $\Rightarrow$  in AV node + vascular bed.  $\Rightarrow$  Adenylate cyclase  $\rightarrow$  cAMP  $\rightarrow$  PKA

16. Concerning adenosine all the following are true EXCEPT:

- A. Is used for terminating paroxysmal supraventricular tachycardia
- B. Has a very short half-life

☒ C. Is contraindicated in patients treated with beta-blockers *same effect*

D. It causes bronchospasm = rare *asthmatic*

☒ E. Is contraindicated in sick sinus syndrome *(causes sinus arrest)*

*more arterial  
afterload  
preload*

*Hyperplasia  
nodal  
AV block  
HR  
SVT  
vasodilation*

17. Concerning dopamine, ONE is TRUE:

- A. Is a transmitter confined to the CNS
- B. Start Stimulating dopaminergic receptors when the dose exceeds 10 mcg/kg/min

☒ C. Decreases renal blood flow

☒ D. Increases cardiac output by stimulating beta-adrenergic receptors

☒ E. Decreases pulmonary artery pressure

18. Concerning esmolol, ONE is TRUE:

- A. Is a beta adrenergic agonist  $\Rightarrow$  blocker
- ☒ B. Is contraindicated in patients with AV-block

C. Has a half-life of 4 hours  $\times$

D. Is more likely than propranolol to cause bronchospasm  $\times$

E. Is broken down in the liver,  $\times$  *metabolized by liver*

19. The definitive therapy for pulmonary embolism include all the following EXCEPT:

- A. Continuous infusion of heparin
- B. Streptokinase  $\checkmark$  *plasminogen activator*

C. Urokinase  $\checkmark$

☒ D. Recombinant tissue plasmin activator *TPA* *tissue plasminogen*  $\otimes$

E. Warfarin  $\checkmark$

20. All the following are risk factors for postoperative nausea and vomiting EXCEPT:

- A. Young age of patient  $\checkmark$
- B. Obesity  $\checkmark$

C. Ketamine anaesthesia  $\checkmark$

☒ D. Male gender  $\checkmark$

E. Ear surgery  $\checkmark$



21. Concerning laryngospasm following extubation all the following are true **EXCEPT**:

- A. It is caused by sensory stimulation of superior laryngeal nerve ✓
- B. It could be treated by administering intravenous lignocaine in 1-1.5 mg/Kg ✓
- C. It can produce negative pressure pulmonary oedema ✓
- D. If laryngospasm persists and hypoxia develops tracheostomy is indicated ( )
- E. Succinylcholine 0.25-1 mg/Kg could be given to paralyze the laryngeal muscles and allow controlled ventilation ✓

22. All the following are signs of pneumothorax occurring during anaesthesia **EXCEPT**:

- A. Low airway ventilatory pressure ✓
- B. Diminished expansion of the affected side ✓
- C. Drop of O<sub>2</sub> saturation ✓
- D. Hypotension, especially in tension pneumothorax ✓
- E. Shift of trachea to the opposite side in tension pneumothorax ✓

23. During laparoscopic cholecystectomy, all the following are signs of

CO<sub>2</sub> embolus **EXCEPT**:

- A. Sudden rise in ET-CO<sub>2</sub> ✓
- B. Mill-Wheel murmur ✓
- C. Fall in SPO<sub>2</sub> ✓
- D. Hypotension ✓
- E. Tachycardia ✓

24. All of the following are probable problems in morbidly obese patients **EXCEPT**:

- A. Cardiac output is decreased ↑
- B. Reduced pulmonary compliance ✓
- C. Decreased FRC ✓
- D. High incidence of gastro-oesophageal reflux ✓
- E. Left and right ventricular hypertrophy ✓

25. Pheochromocytoma is associated with all the followings **EXCEPT**:

- A. It arises from adrenal medulla ✓
- B. Paroxysmal hypertension ✓
- C. Histamine-releasing anaesthetic drugs are best avoided ✓
- D. Hypoglycaemia (not hypotension) ✓
- E. Postoperative hypotension may require noradrenaline infusion ✓



26. Anaesthetic considerations in patients with hyperparathyroidism include all the following EXCEPT:

- A. Adequate hydration preoperatively ✓
- B. Effort to reduce serum calcium level ✓
- C. Acidosis increases ionized calcium ✓
- D. Elevated calcium levels can cause cardiac dysrhythmias ✓
- ☒ E. Postoperatively calcium ion supply is not necessary

27. Considering regional anaesthesia for caesarian section all the following are true EXCEPT:

- A. It causes less neonatal exposure to potentially depressant drugs ✓
- ☒ B. It require a T4 sensory level block
- C. Supplemental oxygen administration is not necessary ✓
- D. Systolic blood pressure should be maintained  $>100$  mmHg ✓
- ☒ E. Epidural morphine 5 mg provides good postoperative analgesia for 6-24 hours ✓ *2-5 hr*

28. ONE of the following drugs is LEAST LIKELY to cross the placenta:

- A. Lidocaine
- B. Pethidine
- C. Midazolam
- D. Thiopentone
- ☒ E. Vecuronium *water soluble*

29. ONE of the following is most likely to decrease uterine tone:

- ☒ A. Administration of isoflurane 1% = *dose dependent uterine relaxation*
- B. Administration of N<sub>2</sub>O 50% = *minimal effect*
- C. Intrathecal injection of 3 ml of 0.5% bupivacaine
- D. Intravenous administration of ketamine 2 mg/Kg BW
- E. Paracervical block with 20 ml of 1% lignocaine

30. Concerning regional anaesthesia for Cesarean Section, ONE is

TRUE:

- A. A block to T4 to cold or pinprick stimuli is the best indicator of pain free C/S delivery
- B. Intraoperative nausea and vomiting occurs in up to 80% of patients who have C/S under regional block
- C. The incidence of nausea and vomiting is increased if fentanyl is added to the local anaesthetic solution during spinal anaesthesia for C/S.
- D. The severity of hypotension after spinal anaesthesia for C/S is related to the speed during injection

☒ E. Regional anaesthesia is not contraindicated in patients with placenta previa.

31. Maternal hyperventilation will result in (one is TRUE):

- ☒ A. Increased umbilical blood flow
- B. Decreased affinity of maternal haemoglobin for oxygen
- ☒ C. Decreased maternal and fetal cardiac output
- D. Increased placental transfer of oxygen
- ☒ E. Increased fetal cerebral blood flow

Hypotension

Fetal acidosis  
Fetal hypoxia

32. The BEST time of application of tourniquet on a limb during general anaesthesia is (one is TRUE):

- A. Before induction of anaesthesia
- B. Immediately after induction of anaesthesia
- C. Before administration of muscle relaxant
- D. Immediately after injection of muscle relaxant
- ☒ E. After establishment of muscle relaxant activity

33. All the following are complications of prone position during back surgery EXCEPT:

- A. Increase of abdominal pressure can contribute to intraoperative bleeding
- B. Stretch or compression of brachial plexus
- C. Arterial or venous occlusion of upper extremity
- ☒ D. Retinal injury
- ☒ E. Sciatic nerve injury

34. All the following should be considered during anaesthesia for infants cardiac catheterization EXCEPT:

- A. Cardiac arrhythmias are common
- B. Hypoxia and acidotic infants need to be stabilized before catheterization
- C. Widening of mediastinum during catheterization suggests perforation of the heart or great vessels.
- ☒ D. Ketamine in acyanotic infants decreases pulmonary artery pressure
- E. Supplemental oxygen administration could be risky in some conditions



35. Anaesthetic considerations in a neonate for repair of tracheo-oesophageal fistula include all the following **EXCEPT**:

- A. Gastrostomy may be necessary before or during induction of anaesthesia ✓
- B. Awake intubation could be performed ✓
- C. Endotracheal tube should be positioned below the fistula ✓ *Trach. no mucus*
- D. Oesophagus is repaired primarily after the fistula is ligated ✓
- E. Gastrostomy tube should be removed immediately after repair of the fistula ✓

36. All the following methods are of benefit in one lung ventilation to improve oxygenation **EXCEPT**:

- A. Selective dependent lung PEEP of 15 Cm *5 H<sub>2</sub>O* ✓ *non dependent CPAP*
- B. Intermittent inflation of the non ventilated lung ✓
- C. Selective non ventilated lung CPAP without tidal ventilation ✓
- D. Differential PEEP/CPAP (PEEP to ventilated and CPAP to non ventilated lung) ✓
- E. Use of FiO<sub>2</sub> of 1.0 with conventional ventilation ✓ *50%*

37. All the following are possible complications associated with mediastinoscopy **EXCEPT**:

- A. Bradycardia ✓
- B. Excessive haemorrhage ✓
- C. Cerebral ischaemia ✓
- D. Horner's syndrome ✓
- E. Recurrent laryngeal nerve damage ✓

38. CNS protection in cardiac surgery patients could be achieved by all the following **EXCEPT**:

- A. Moderate hypothermia ✓
- B. Maintenance of usual mean arterial pressure ✓
- C. Prevention of air embolization ✓
- D. Hyperglycaemia ✓ *→ neutral*
- E. Avoidance of N<sub>2</sub>O after hypothermic cardio pulmonary bypass ✓

39. Intraoperative transesophageal echocardiography (TEE) is helpful for the following reasons **EXCEPT**:

- A. Perioperative evaluation of aortic dissection ✓
- B. Perioperative evaluation of myocardial ischaemia ✓
- C. Postoperative evaluation of valve repair ✓
- D. Perioperative ECG monitoring ✓
- E. Evaluation of intracardiac air before termination of cardiopulmonary bypass ✓



40. ONE of the following is the MOST LIKELY effect of infrarenal cross clamping of the aorta (without pharmacological manipulation):

- ☒ A. Decreased cardiac output ✓
- B. Decreased pulmonary artery occlusion pressure ✓
- C. Increased left ventricular stroke volume ✓
- D. No effect on renal blood flow ✓
- E. Improved myocardial oxygen supply / demand ratio ✓

41. Anaesthetic considerations in vascular patients include all the following EXCEPT:

- A. May have a significant smoking history ✓
- B. Renal insufficiency is common ✓
- C. They are often treated with anticoagulant ✓
- ☒ D. They are often have suprarenal gland disease ⇒ ↑ ICP
- E. There is a risk of infection with vascular graft ✓

42. All the following are anaesthetic considerations in patients with head trauma EXCEPT:

- A. Autoregulation of cerebral blood flow usually impaired ✓
- B. Mild hypocapnoea can improve outcome ✓
- C. Intracranial hypertension may predispose to pulmonary oedema ✓
- D. Severe head trauma can cause arterial hypoxaemia ✓
- ☒ E. Cerebral perfusion pressure should be reduced to less than 60 mmHg 7.20

43. Concerning Electro Convulsive Therapy (ECT) all the following are true EXCEPT:

- A. It is ideally performed under general anaesthesia with muscle relaxation ✓
- B. Presence of anaesthetist is optimal for airway management ✓
- C. A recent myocardial infarction is a contraindication ✓
- ☒ D. An increased Intra Cerebral Pressure (ICP) is not a contraindication
- E. Premedication with atropine is desirable ✓

44. Cerebral blood flow increases during anaesthesia with ONE of the following:

- A. Infusion of thiopentone ✓
- B. Midazolam ✓
- C. Infusion of propofol ✓
- D. Infusion of etomidate ✓
- ☒ E. Halothane

45. In a patient with chronic congestive heart failure, ONE of the following is the safest pharmacological approach to reduce intracranial pressure:

- A. Dexamethazone
- ☒ B. Furosemide
- C. Mannitol
- D. Thiopentone
- E. Propofol

46. During micro laryngeal surgery using Laser, all the following are essential precautions EXCEPT:

- A. Use of special designed endotracheal tubes ✓
- ☒ B. Red rubber endotracheal tubes are safe to be used ✓
- C. All operating room personnel must wear safety glasses ✓
- D. Surgical instruments should be finished of non-reflecting material ✓
- E. Airway fire is possible

47. All the following are complications of tracheostomy EXCEPT:

- A. Infection of tracheo-broncheal tree
- B. Tracheal stenosis
- ☒ C. Arytenoid cartilage damage
- D. Stomal stricture
- E. Plugged tracheostomy tube

48. Anaesthesia for upper airway endoscopy requires all the following EXCEPT:

- A. Profound muscle relaxation ✓
- B. Immobile surgical field ✓
- C. Adequate ventilation and oxygenation ✓
- ☒ D. Intubation with standard size is always necessary. (4-6 Tracheal tube) short low volume Cath
- E. Manual jet ventilation could be used ✓

49. Anaesthetic considerations in middle ear surgery include all the following EXCEPT:

- A. Deliberate hypotension is necessary ✓
- ☒ B. Use of N<sub>2</sub>O is advocated surgical field.
- C. Elevation of head 15° is useful ✓
- D. Mean arterial pressure of 60-70 mmHg is adequate ✓
- E. Postoperative vomiting is very common ✓



50. Anaesthesia for change of dressing of paediatric burnt patients include all the following EXCEPT:

- A. Ketamine + Midazolam
- B. N<sub>2</sub>O/O<sub>2</sub> (50/50) supplemented by a narcotic analgesic *into IV?*
- C. Continuous propofol infusion ✓
- D. General anaesthesia plus intubation
- E. Regional anaesthesia

51. All the following influence the intra ocular pressure (IOP) EXCEPT:

- A. Mild increase in blood pressure
- B. Movement of aqueous humor
- C. Change in choroidal blood volume
- D. Central venous pressure
- E. Extraocular muscle tone

52. *6-8 ml* Peribulbar block compared to retrobulbar block *3-4 ml* has the following advantages EXCEPT:

- A. Less incidence of optic nerve damage ✓
- B. Use of smaller volume of local anaesthetic
- C. Separate facial nerve block is not needed ✓
- D. No spread to the contralateral orbit ✓
- E. No incidence of brain-stem anaesthesia ✓

53. All the following are manifestations of the 'TURP' syndrome EXCEPT:

- A. Hyponatraemia ✓
- B. Hypertension
- C. Haemolysis ✓
- D. Pulmonary oedema ✓
- E. Confusion ✓

54. In MRI imaging, all the following are affected by the strong magnetic field EXCEPT:

- A. Intracranial clips ✓
- B. Pacemakers ✓
- C. Capnography samplers ✓
- D. Laryngoscope batteries
- E. Needles

*Margall*  
152

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*Margall*  
152



55. All the following are desirable properties of ideal sedative technique in dental surgery EXCEPT:

- A. Rapid onset and recovery ✓
- B. Predictable duration ✓
- C. It should produce effective anxiolysis ✓
- ☒ D. Has effect on the gag reflex and vomiting ✓
- E. No side effects ✓

56. The height of spinal block needed for operations on the testes is, one is TRUE : *inward testis*

- A. S2
- B. L4
- C. L3
- D. T12
- ☒ E. T10

57. Concerning cyanide poisoning all the following are true EXCEPT:

- A. It is a recognized complication of sodium nitroprusside ✓
- B. It inhibits cytochrome oxidase system ✓
- C. It causes histotoxic hypoxia ✓
- ☒ D. It causes an increase in the arterio-venous oxygen content difference. *↑ venous O<sub>2</sub>*
- E. Tachycardia is a recognized feature at the early stages of the poisoning

*MV sodium thio sulfate → thio cyanide → kidney.*

58. All the following are true concerning Guillain Barre' syndrome EXCEPT: *radiotherapy, corticosteroid, plasmapheresis, tachycardia, Nifedipine, cefepime*

- A. Usually motor and sensory nerves are involved ✓
- B. Autonomic involvement may occur. *some time* ✓
- ☒ C. Complete recovery occur in about all patients. *30%*
- D. Steroid may be used for long time ✓
- E. Patients may need respiratory support ✓

*Recovery weeks to year (axonal) parathion (glucocorticoid) - calves*

59. Concerning near drowning all the following are true EXCEPT: *Rescue*

- A. Pulmonary oedema may be caused by the fluid shift of water inhalation
- B. In cold water the victim may have dry lung.
- C. There may be hypovolaemia. *salt water* ✓
- D. Cerebral hypoxia is delayed in cold water ✓
- ☒ E. Cerebral hypoxia is delayed in warm water

*Hypomagnesaemia  
Hypokalaemia*

*← Hypomagnesaemia*

60. PEEP is effective for treatment of hypoxia resulting from each of the following EXCEPT:

- A. Cardiogenic pulmonary oedema
- B. Intraoperative trendelenburg position  $\Rightarrow$  PEEP + compliance
- C. Lateral position during total hip replacement
- D. Lung contusion
- E. Status asthmaticus

61. All the following are objective values of adequate weaning from mechanical ventilation EXCEPT:

- A. Tidal Volume greater than 500 ml and Respiratory rate less than 30 per minute  $> 5 \text{ mL/kg}$
- B. Vital Capacity greater than 10 ml per kilogramme
- C. Respiratory rate less than 30 per minute  $< 35$
- D.  $\text{PaO}_2$  greater than 100 mmHg on an  $\text{FiO}_2$  of 0.4  $\frac{100}{0.4} = 250$
- E. Haemodynamic stability  $\checkmark$

62. Concerning nitric oxide, all the following are true EXCEPT:

- A. Is a naturally occurring neurotransmitter  $\checkmark$
- B. Causes smooth muscle relaxation by increasing levels of cyclic GMP  $\checkmark$
- C. Significant level accumulates if administered for long period  $\text{no synthesis}$
- D. Inhibits platelet aggregation
- E. Is responsible for the action of sodium nitroprusside  $\checkmark$

63. Chronic renal failure patients for kidney transplantation pose all the following risk factors EXCEPT:

- A. Potential for blood loss  $\checkmark$
- B. Low cardiac output
- C. Anaemia  $\checkmark$
- D. Pulmonary oedema  $\checkmark$
- E. Infection  $\checkmark$

64. Anaesthetic considerations in diabetic patients include all the following EXCEPT:

- A. Good control of blood sugar is important  $\checkmark$
- B. Diabetes mellitus reduces gastric emptying  $\checkmark$
- C. Increased epidural dose requirement
- D. Sliding scale guided by urine is not efficient  $\checkmark$  PHS
- E. Impaired renal function  $\checkmark$



65. Increased billirubin in the urine in a jaundiced patient is likely in all the following conditions EXCEPT:

- A. Metastatic carcinoma in the liver
- B. Obstruction of the bile ducts
- C. Acute haemolysis
- D. Infective hepatitis
- E. Chlorpromazine cholestatic jaundice

66. An increase in pulse pressure may be found in all the following EXCEPT:

- A. Aortic valve regurgitation
- B. Persistent ductus arteriosus
- C. Increased stroke volume
- D. Mitral stenosis
- E. Thyrotoxicosis

67. In a patient with a duodenal obstruction, all the following are true EXCEPT:

- A. Serum potassium will be low
- B. Potassium is lost in the gastric fluid
- C. Hypochloraemic alkalosis develops
- D. Potassium is retained by the kidney
- E. Potassium is excreted by the kidney

68. All the following are features of acute fat embolism EXCEPT:

- A. Convulsion
- B. Retinal oedema
- C. Pyrexia
- D. Petechial haemorrhages
- E. Carbon dioxide retention

69. All the following occur in acute pancreatitis EXCEPT:

- A. Retroperitoneal haemorrhage
- B. Tetany
- C. Hypoglycaemia
- D. Pancreatic abscess
- E. Pseudocyst formation

*Right fluid respiration - thrombolytic  
fat - male  
fat - 20-40%  
fat - metabolic  
fat - Rh negative  
fat - intracranial pressure*

*Hyperglycaemia*

*Hypocalcaemia*

70. Persistent vomiting occur in all the following conditions EXCEPT:

- A. Hiatus hernia ✓
- ☒ B. Acute appendicitis ✓
- C. Uraemia ✓
- D. Intussusception
- E. Increased intracranial pressure ✓

71. During CPR ONE of the following is TRUE:

- A. Dilated pupils usually indicate neurological damage
- B. Intravenous adrenaline acts mainly by direct cardiac stimulation ✓
- C. Administration of calcium is valuable in treatment of asystolic arrest ✓
- D. 10 ml of 10% calcium gluconate is as effective as 10 ml of 10% calcium chloride ✓
- ☒ E. Calcium ions should not be given to an intravenously running NaHCO<sub>3</sub> infusion ✓

72. The drug of choice in the management of acute anaphylactic shock is:

- A. Corticosteroids
- ☒ B. Adrenaline
- C. Phenylephrine
- D. Noradrenaline
- E. Diphenhydramine

73. Paroxysmal supraventricular tachycardia can be effectively treated by all the following EXCEPT:

- A. Adenosine
- B. Verapamil
- C. Lidocaine ✓
- D. Rapid atrial pacing
- E. Pressure on the carotid sinus

74. In surgical correction for scoliosis, one is TRUE

- A. The presence of pulmonary hypertension is a contraindication to surgery ✓
- B. With the use of hypotensive anaesthesia blood is usually not needed ✓
- C. Pre-operative left ventricular hypertrophy is a feature ✓ R+V+ ✓
- D. One-lung anaesthesia is never necessary ✓
- ☒ E. Wake-up test may be associated with high incidence of awareness ✓

*to monitor neuromuscular block (light level of anaesthesia)*



October 1, 2008

Final exam

9:51 AM

Paper one

Anesthesia Exam

October 06

Final - Paper One

1. Miosis, incontinence, excess salivation, and convulsions are toxic effects of

- A. Amphetamines
- B. Phenothiazines
- C. Cocaine
- D. Tricyclic antidepressants
- ☒ E. Organophosphate insecticides

2. A 75-year-old man is confused, restless and disoriented two days after an aortic aneurysm repair. Serum sodium concentration is 113 mEq/L, serum osmolality is low, and urine is hypertonic. The MOST appropriate treatment is

- A. Restriction of fluid intake
- B. Administration of isotonic saline solution
- ☒ C. Administration of hypertonic (3%) saline solution
- D. Administration of spironolactone
- E. Infusion of mannitol 25 g

3. Addition of 20 cmH<sub>2</sub>O positive end-expiratory pressure to a patient receiving controlled mechanical ventilation decreases cardiac output and left ventricular function by

- A. Increasing right ventricular preload
- ☒ B. Increasing right ventricular afterload
- C. Increasing left ventricular preload
- D. Increasing left ventricular afterload
- E. Producing myocardial ischemia

4. A 26-year-old patient with multiple trauma is admitted to the intensive care unit postoperatively. The early development of polyuria, hypotension, low urine sodium excretion, high serum osmolality, and normal serum creatinine concentration is BEST explained by

- A. Adrenal insufficiency
- B. Fluoride-induced high-output renal failure
- ☒ C. Inappropriate ADH secretion
- D. Intraoperative fluid overload
- E. Posterior pituitary insufficiency

74 5. Microatelectasis 48 hours after abdominal surgery is most consistently manifested by

- A. Decreased  $\text{PaO}_2$   
B. Ground glass infiltrate on a roentgenogram of the chest  
C. Scattered fine inspiratory rales  
D. Increased  $\text{PaCO}_2$   
E. Scattered areas of dullness to chest percussion
- RESPIRATORY

66 6. Two hours after sustaining extensive burns of the head, neck and chest in a house fire, a patient has stridor and difficulty breathing.

The MOST appropriate management is

- A. Administration of aerosolized epinephrine  
B. Administration of helium and oxygen  
C. Endotracheal intubation  
D. Intravenous injection of dexamethasone  
E. Tracheostomy
- RESPIRATORY

25 7. The MOST important factor regulating blood flow to ischemic cerebral tissue is

- A. Systolic blood pressure  
B.  $\text{PaO}_2$   
C. Cerebral perfusion pressure  
D.  $\text{PaCO}_2$   
E. Cerebral oxygen consumption
- NEURO

519 8. Depression of cerebral oxygen requirements below the level required to create an isoelectric EEG can be achieved by

- A. Administration of isoflurane  
B. Administration of nimodipine  
C. Barbiturate coma  
D. Hyperventilation  
E. Hypothermia
- NEURO



October 06

A 32-year-old woman treated with lithium for manic-depressive psychosis is given methohexital 90 mg and succinylcholine 35 mg intravenously for electroconvulsive therapy. Ten minutes later, she remains sedated and the peripheral nerve stimulator shows a decreased twitch response. The MOST likely explanation is

- A. Cerebral hypoxia
- B. Postural depression
- C. Relative overdose of methohexital
- D. Unrecognized atypical pseudocholinesterase
- E. Residual lithium effects

A 32-year-old patient undergoes resection of a descending thoracic aneurysm under anesthesia with morphine, nitrous oxide, oxygen, and pancuronium. In spite of normal somatosensory evoked potentials (SSEP) during the procedure, the patient has paraplegia postoperatively. The factor MOST likely responsible for failure to note the deficit intraoperatively is

- A. The effect of nitrous oxide on SSEP
- B. The effect of morphine on SSEP
- C. Failure to test motor pathways
- D. Hyperventilation to a  $\text{PaCO}_2$  of 30 mmHg
- E. Unintentional hypothermia to 34°C

11. During apneic oxygenation ( $\text{FIO}_2$  1.0) through a rigid bronchoscope
- A. Duration of the procedure is limited by the increase in  $\text{PaCO}_2$
  - B. Functional residual capacity decreases 5% per min
  - C.  $\text{PaO}_2$  remains unchanged for the first 5 minutes
  - D.  $\text{PaCO}_2$  increases 2 to 6 mmHg/min for 15 minutes and then reaches a plateau
  - E.  $\text{PaO}_2$  and  $\text{PaCO}_2$  equilibrate with mixed venous gases at the same rate

12. During right upper lobectomy and one-lung ventilation with a double-lumen endotracheal tube, the  $\text{PaO}_2$  decreases to 40 mmHg. The  $\text{PaCO}_2$  is 39 mmHg. Which of the following is MOST appropriate?

- A. Confirm position of the tube with bronchoscopy
- B. Apply 5 cmH<sub>2</sub>O continuous positive airway pressure to the nondependent lung
- C. Apply 5 cmH<sub>2</sub>O positive end-expiratory pressure to the dependent lung
- D. Resume two-lung ventilation
- E. Clamp the pulmonary artery of the nondependent lung



- 22 13. During anesthesia, the ventilation/perfusion ratios change
- A. To preferential ventilation of the dependent portion
  - ☒ B. Due to cephalad shift of the diaphragm
  - C. By insignificant amounts from that in the awake state
  - D. To preferential perfusion of the superior portion
  - E. From changes in pulmonary compliance
- B

14. Compared with healthy, nonhypertensive patients, in patients with untreated hypertension undergoing anesthesia and operation.
- ☒ A. Cerebral ischemia may occur at higher blood pressures
  - B. Intravenous fluid should be restricted before induction
  - C. Left ventricular hypertrophy enhances compensation for intraoperative fluid loss
  - D. Responses to sympathetic stimulation are decreased
  - E. The incidence of intraoperative hypotension is lower
- CNS

- 65 15. A 67-year-old man is undergoing total hip replacement under general anesthesia. He had a permanent endocardial VVI pacemaker placed two years ago for complete heart block, and since arrival in the operating room has been paced continuously. Use of the electrocautery causes the pacemaker to malfunction intermittently. The MOST appropriate management is to
- ☒ A. Tape a magnet over the pacemaker generator and convert to asynchronous mode
  - B. Do nothing since the pacemaker is programmed to deal with this circumstance
  - C. Stop the surgeon from using the electrocautery
  - D. Limit the surgeon to 10 sec/min electrocautery bursts
  - E. Place the electrocautery indifferent lead as close as possible to the pacemaker
- 2-  
D5A

- 21 16. A pulmonary artery catheter is placed in an awake patient breathing room air. Typical right ventricular and pulmonary artery pressure tracings are obtained. With the catheter balloon inflated, blood drawn from the distal port has a PaO<sub>2</sub> of 100 mmHg, while a simultaneous radial artery sample has a PaO<sub>2</sub> of 90 mmHg. These data indicate that the
- A. Shunt fraction is greater than 10%
  - ☒ B. Catheter is in the wedged position
  - C. Catheter has entered a pulmonary vein
  - D. Cardiac output is abnormally high
  - E. Oxygen electrode is malfunctioning
- 2



75 17. A 75-year-old man with a left bundle branch block is undergoing placement of a pulmonary artery catheter through the right internal jugular vein. He becomes pale and his heart rate decreases to 40 bpm when the catheter tip enters the right ventricle. The MOST likely cause is:

- A. A catheter loop in the right atrium
- B. Acute myocardial infarction
- C. Acute pneumothorax
- D. Carotid sinus reflex
- E. Complete heart block

CVS

pale - HR:40

18. A 70-kg 47-year-old man is undergoing a repeat coronary artery bypass graft. Following sternotomy, administration of heparin 300 units/kg for anticoagulation increases the activated coagulation time from a baseline of 135 sec to 210 sec. This finding is compatible with

- A. Antithrombin III deficiency
- B. Heparin-induced thrombocytopenia
- C. Normal response to this dose of heparin
- D. Decreased sensitivity to heparin
- E. Von Willebrand's disease

CVS

19. As part of a preoperative evaluation, a patient has a thallium scan showing a "cold spot" over the left ventricle that occurs with moderate exercise and disappears at rest. This MOST likely indicates

- A. Moderate-sized aneurysm of the left ventricle
- B. Acute myocardial ischemia
- C. Recent myocardial infarction
- D. Old myocardial infarction
- E. Prinzmetal's variant angina

CVS

20. Spinal anesthesia at a T6 sensory level is MOST likely to improve cardiac output in patients with

- A. Aortic stenosis
- B. Asymmetric septal hypertrophy (IHSS)
- C. Chronic constrictive pericarditis
- D. Cor pulmonale
- E. Mitral regurgitation

CVS

October 06

21. After receiving excessive intraoperative blood replacement, a patient anesthetized with fentanyl, diazepam, and nitrous oxide develops acute pulmonary edema. The drug MOST likely to help him acutely

- A. Isodurane
- B. Nitroprusside
- C. Digoxin
- D. Nitroglycerin
- E. Furosemide

CVS

22. Compared with adults, caudal anesthesia in children is associated with

- A. Higher risk for subarachnoid puncture
- B. More severe hypotension
- C. More rapid onset of sensory block
- D. Smaller volume of anesthetic per kilogram of body weight
- E. Toxic effects at lower serum levels of bupivacaine

23. Which of the following is MOST likely to decrease uterine tone?

- A. Administration of isoflurane 1%
- B. Administration of nitrous oxide 50%
- C. Epidural injection of 5 ml of 0.5% bupivacaine
- D. Intravenous administration of ketamine 2 mg/kg
- E. Paracervical block with 20 ml of 1% lidocaine

24. A 19-year-old woman receives a spinal anesthetic for a repeat cesarean delivery. Two days later she is afebrile but has severe occipital pain that is aggravated by sitting or standing and relieved by lying flat. Associated findings would likely include

- A. Bradycardia
- B. Difficulty swallowing
- C. Diplopia
- D. Facial pain
- E. Horner's syndrome

obstetric

25. The MOST likely cause of a fetal heart rate pattern of variable decelerations to 90 bpm is

- A. Aorticaval compression
- B. Compression of the fetal head
- C. Fetal acidosis
- D. Maternal hypotension
- E. Umbilical cord compression

obstetric



43

26. Following a vaginal hysterectomy in the lithotomy position under general anesthesia, a patient has numbness of the lateral aspect of the left calf and medial half of the dorsum of the left foot. On physical examination she has footdrop and the toes cannot be extended. Which nerve is MOST likely to be involved?

- ☒ A. Common peroneal nerve
- B. Deep peroneal nerve
- C. Posterior tibial nerve
- D. Saphenous nerve
- E. Sciatic nerve

610

73

27. During laser microsurgery of the larynx, a rubber endotracheal tube wrapped with aluminum-foil tape starts to smolder and give off smoke. The first step is to

- A. Suction the endotracheal tube
- B. Add helium to the inspired gas mixture
- ☒ C. Remove the endotracheal tube
- D. Turn off the fresh gas flow
- E. Pack a saline-soaked gauze sponge into the hypopharynx

17

28. The jet ventilation technique using an injector during laryngobronchoscopy relies on

- ☒ A. Air entrainment
- B. Relative density of inhaled gases
- C. Presence of an endotracheal tube
- D. Presence of spontaneous ventilation
- E. Use of helium-oxygen mixtures

RSP 111

62

29. Intraocular pressure is

- A. Decreased by glycopyrrolate
- B. Increased by hyperventilation
- ☒ C. Decreased by halothane
- D. Increased by nondepolarizing muscle relaxants
- E. Decreased by succinylcholine

9ph 110

42

30. The MOST sensitive means of detecting venous air embolism is

- A. Precordial Doppler stethoscope
- ☒ B. Transesophageal echocardiography
- C. End-tidal carbon dioxide measurement
- D. Pulmonary artery pressure measurement
- E. Central venous pressure measurement

610

16. Which of the following surgical incisions is associated with the highest risk of postoperative pulmonary complications?

- ☒ A. Median sternotomy.
- ☐ B. Lateral thoracotomy.
- ☐ C. Open cholecystectomy.
- ☐ D. Horizontal laparotomy.
- ☐ E. Vertical laparotomy.

17. Which of the following are seen with therapeutic maternal plasma concentrations of  $MgSO_4$  during the treatment of pre-eclampsia?

- ☐ A. Decreased muscle tone of the neonate
- ☐ B. Shortened PR interval on ECG
- ☐ C. Increased excitability of the muscle fiber membrane
- ☒ D. Delayed recovery from non-depolarizing muscle relaxants
- ☐ E. Loss of maternal deep tendon reflexes

18. With regard to a neonate with a tracheo-esophageal fistula:

- ☒ A. The diagnosis is suggested by the inability to pass a feeding tube into the stomach
- ☐ B. Unlikely to be associated with other congenital abnormalities.
- ☐ C. The child should be intubated soon after birth to reduce aspiration risk.
- ☐ D. Occurs most frequently with post-term (more than 42 weeks) infants.
- ☐ E. Immediate surgical correction is mandatory.

19. The MOST LIKELY cause of persistent hypertension in a six year old child with a normal body mass index is.

- ☐ A. Vasculitis
- ☐ B. Pheochromocytoma
- ☐ C. 'Essential' hypertension
- ☐ D. Coarctation of the aorta.
- ☒ E. Renal disease

20. When an arterial pressure wave is over-damped, which parameter is likely to remain unchanged?

- ☐ A. Rate of systolic upstroke.
- ☐ B. End Diastolic pressure.
- ☒ C. Mean pressure.
- ☐ D. Pulse pressure.
- ☐ E. Rate of systolic decline.



21. A 25 year old female on induction, SBP (Systolic Blood Pressure) 45mmHg, so the obstetrician quickly opened the abdomen and clamped the bleeding ectopic. The ECG shows SVT with a HR of 180/min. Apart from rapid IV infusion, the next intervention will be:

- ☒ A. Phenylephrine.
- ☐ B. Verapamil.
- ☐ C. Propranolol.
- ☐ D. Lignocaine.
- ☐ E. Dopamine.

22. After inserting a left-sided double-lumen tube, both cuffs are inflated. When the tracheal lumen is clamped, breath sounds are heard only in the lower right lung field. When the bronchial lumen is clamped, breath sounds are heard over the entire left lung field. Where is the tube positioned?

- ☒ A. Tracheal orifice above the carina and bronchial limb in the right bronchus.
- ☐ B. Tracheal orifice above the carina and bronchial limb in the left bronchus.
- ☐ C. Tracheal orifice and bronchial limb both above the carina.
- ☐ D. Tracheal cuff and bronchial limb both in the right bronchus.
- ☐ E. Tracheal orifice and bronchial limb both in the left bronchus.

23. In a 65-year-old man, which of the following findings on preoperative pulmonary function testing is associated with the highest risk for respiratory insufficiency following pneumonectomy:

- ☐ A. Maximum voluntary ventilation at 65% of predicted.
- ☐ B. Mean pulmonary artery pressure of 28 mmHg.
- ☒ C. Forced expiratory volume in one second (FEV1) less than 1 liter.
- ☐ D. Residual volume to total lung capacity (RV/TLC) ratio of 0.35.
- ☐ E. Vital capacity of 3 liters.

24. Pulmonary capillary wedge pressure can be increased in all,

EXCEPT:

- ☐ A. After myocardial infarction.
- ☐ B. Mitral stenosis.
- ☒ C. Aortic incompetence.
- ☐ D. Pulmonary fibrosis.
- ☒ E. Pulmonary stenosis

25. An aortic aneurysm can be said to be leaking if the following are there, EXCEPT:

- A. Back pain.
- B. Anuria.
- ☒ C. Jaundice.
- D. No femoral pulse.
- E. Absent bowel sounds.

26. A patient with esophageal obstruction is to have a general anesthetic for esophagoscopy. He has had a barium swallow on the previous day. One of the greatest dangers of the planned procedure is

- A. Bleeding
- B. Hypotension
- C. Difficult intubation
- ☒ D. Aspiration
- E. Arrhythmia

27. Contraindication to discharge home of a patient who had a hernia repair under general anesthesia include all of the following EXCEPT

- ☒ A. Nausea
- B. Inability to drink without vomiting
- C. Heart rate 50% higher than preoperative value
- D. Inability to walk due to groin pain
- E. Disorientation to person and place

28. Considerations of regional anesthesia include

- A. Paracervical block is effective for second stage of labor
- B. A disadvantage of paracervical block is a high incidence of fetal tachycardia
- C. A test dose is not necessary if there is negative aspiration of the epidural catheter
- D. Epinephrine is contraindicated in epidural injection secondary to an adverse effect on uterine blood flow
- ☒ E. Ephedrine is the drug of choice for restoring blood pressure after regional blockade

29. Regional anesthesia techniques that can be used for forceps deliveries include all of the following EXCEPT

- A. Bilateral pudendal block
- ☒ B. Paracervical block
- C. Subarachnoid block
- D. Caudal block
- E. Epidural block



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  - D. Caudal block
  - E. Epidural block

35. The most common eye injury sustained under anaesthesia is

- A. Corneal perforation
- B. Conjunctivitis
- C. Uveitis
- ☒ D. Corneal abrasion
- E. Retinal artery thrombosis

36. Patients who undergo outpatient surgery with isoflurane should not drive or operate machinery for at least

- A. 30 minutes
- B. 1 hour
- C. 4 hours
- D. 8 hours
- ☒ E. 16 hours

37. Oxygen toxicity, one is TRUE:

- ☒ A. Develops after breathing 100% oxygen for 24 hours
- B. Is not dose related X
- C. Develops after 36 hours of exposure to 25% oxygen X
- D. Is due to specifically to the oxygen molecule X
- E. Is so important that 100% oxygen should never be used /

38. The renal lesion associated with methoxyflurane

- A. Involves the glomerulus
- B. Is not dose related X
- C. Causes decreased urine volume X
- ☒ D. Is caused by the fluoride ion
- E. Will cause a decreased BUN

39. During the performance of a stellate ganglion block, the patient becomes apnoeic. This is likely due to

- A. Vertebral artery injection of local anesthetic
- B. Injection of local anesthetic into the periosteum
- C. Phrenic nerve paralysis
- ☒ D. Subarachnoid injection of local anesthetic
- E. Pneumothorax



40. When properly positioned, a left sided Robertshaw double lumen tube will have its lumens ending

- A. In the left bronchus and the right bronchus
- ☒ B. In the left bronchus and in the trachea
- C. In the right bronchus and in the trachea
- D. In the left upper lobe bronchus and in the left lower lobe bronchus
- E. Both in the trachea

41. An example of a central pain state is, one is TRUE:

- A. Postoperative incision pain
- B. Gallbladder pain
- ☒ C. Phantom limb pain
- D. Bone fracture pain
- E. Headache

42. Post herpetic neuralgia, one is TRUE

- A. Is common in children and adolescents
- B. Is best treated with opioids
- C. Never respond to local application of counter irritants
- ☒ D. Usually responds to tricyclic antidepressants
- ☒ E. Is a difficult syndrome to treat, and success is limited

43. Signs of reflex sympathetic dystrophy may include all of the following EXCEPT

- A. Hyperesthesia
- B. Coldness or hyperthermia
- ☒ C. Pain that is of short duration
- D. Brittle nails
- E. Osteoporosis

44. Advantages of patient controlled analgesia include all of the following EXCEPT

- A. High patient satisfaction
- B. Elimination of painful injections
- ☒ C. No need to titrate drug with increasing age
- D. More consistent levels of analgesia
- E. The ability of the patient to titrate pain relief to painful procedures such as chest physical therapy

45. In order to provide an adequate sensory level for transurethral prostate resection, the sensory level must be, one is TRUE

- A. T4
- B. T6
- C. T8
- ☒ D. T10
- E. T12

46. A patient breathing oxygen at 5L /min via a mask without a reservoir will have an FIO<sub>2</sub> of approximately

- A. 30%
- ☒ B. 40%
- C. 50%
- D. 60%
- E. 70%

47. The patient becomes hypotensive ~~immediately after institution of~~ mechanical ventilation. The appropriate first intervention, one is TRUE

- A. Stat chest radiograph
- ☒ B. Intravenous fluid bolus
- C. Pericardiocentesis
- D. Hyperventilation with 100% oxygen
- E. Thorcotomy and aortic crossclamp

48. An extremely potent local anesthetic that may produce marked vasoconstriction is

- ☒ A. Cocaine
- B. Benzocaine
- C. Procaine
- D. Lidocaine
- E. Tetracaine



53. In comparing patients undergoing esophagectomy against those undergoing pulmonary resection, it is generally TRUE that esophagectomy patients
- A. Have better nutritional status
  - B. Have less risk of aspiration
  - ☒ C. Have better pulmonary function
  - D. Are less likely to be hypoxic during single lung ventilation
  - E. Are less likely to need postoperative ventilation
54. The MOST common cause of anesthetic disaster, one is TRUE
- A. Aspiration pneumonia
  - B. Halothane hepatitis
  - C. Circulatory instability
  - D. Malignant hyperthermia
  - ☒ E. Hypoxemia
55. If a patient undergoing thoracotomy receives intercostal block with bupivacaine, his post operative period will, one is TRUE
- A. Be little different from controls
  - ☒ B. Show marked improvement in respiratory function over control
  - C. Shows little difference in vital capacity but marked pain relief
  - D. Be marked by hyperventilation
  - E. Be marked by increased incidence of atelectasis
56. Indications for lumbar sympathetic blockade include all of the following EXCEPT
- A. Acute herpes zoster
  - B. Phantom limb pain
  - C. Reflex sympathetic dystrophy
  - ☒ D. Lumbar facet syndrome
  - E. Vascular insufficiency
57. The pain of carcinoma of pancreas can be blocked by, one is TRUE
- ☒ A. Celiac plexus block
  - B. Intercostal block
  - C. Lumbar sympathetic block
  - D. Stellate ganglion block
  - E. Facet block

58. Risk factors associated with perioperative renal failure include all of the following EXCEPT

- ☒ A. Hypervolemia
- B. Diabetes mellitus
- C. Amikacin therapy
- D. Sepsis
- E. Hypertension

59. Reperfusion of ischemic tissues can cause all the following EXCEPT:

- ☒ A. Metabolic alkalosis
- B. Hyperkalaemia
- C. Myoglobinaemia
- D. Lung damage
- E. Accumulation of free oxygen radicals

60. Anaesthetic implication of hepatic impairment include all the following EXCEPT:

- A. The majority of oxygen delivery to the liver is delivered via portal vein.
- ☒ B. Halothane is the only anaesthetic vapour which reduce liver oxygen delivery
- C. Cisatracurium is preferable to pancuronium
- D. There is a possibility of hyperdynamic circulation
- E. The albumin/globulin ratio is inverted

61. Anaesthesia in muscle disease, which is TRUE?

- ☒ A. Patients with muscular dystrophy often have respiratory and cardiac impairment
- B. Myaesthetic patient needs normal dose of atracurium
- C. Patients with myesthetic syndrome are resistant to depolarizing and non-depolarizing relaxants
- ☒ D. The weakness of myaesthetic syndrome is improved with anticholinesterase
- E. Patients with multiple sclerosis respond normally to non-depolarizing muscle relaxants

62. Cleft lip and Palate, one is TRUE:

- A. Are usually associated with other congenital anomalies.
- B. Need to be repaired urgently because the infant will be unable to feed.
- C. Are usually a midline defect.
- ☒ D. Constitute a major intubation problem.
- ☒ E. Are usually repaired separately.



63. The MOST COMMON early sign of amniotic fluid embolism (AFE) following a normal vaginal delivery is:

- A. Skin rash.
- B. Hypertension.
- C. Fitting.
- D. Abnormal bleeding.
- ☒ E. Cyanosis.

64. All the following are indications of poor ventricular function in cardiac patients EXCEPT:

- A. Dyspnoea at rest.
- B. Hepatomegaly.
- C. Confusion.
- ☒ D. Hypertension and tachycardia on exertion.
- E. Anorexia.

65. Regarding differences in signs and symptoms between chronic bronchitis and emphysema, all the following are true EXCEPT:

- A. Cough is more frequent in chronic bronchitis.
- ☒ B. Haematocrit is elevated in emphysema.
- C. PaCO<sub>2</sub> is usually normal in emphysema.
- D. Airway resistance is increased in chronic bronchitis.
- E. Cor pulmonale is a complication of chronic bronchitis.

emphysema → dyspnoea  
bronchitis → cough  
(3m - 2y)  
↑ CO<sub>2</sub> - ↓ O<sub>2</sub>  
↑ HCT

66. All the following should be considered in emergency operations in patients with haematological defects EXCEPT:

- A. Patients with platelet count under 50000/microliters develop significant bleeding.
- B. Prolonged BT (bleeding time) and normal platelet count implies qualitative platelet defect by aspirin or NSAID.
- ☒ C. The PT only is prolonged in warfarin therapy even at high doses.
- D. Normal plasma fibrinogen level is 200-400 mg/dL.
- E. Warfarin effect could be reversed by intravenous Vit. K administration.

67. All the following are some of the complications associated with pregnancy induced hypertension EXCEPT:

- A. Hyperexcitability.
- B. Elevated liver enzymes.
- ☒ C. Increased intravascular volume.
- D. Prolonged PTT.
- E. Sodium retention.

68. Regarding anaesthesia for post-tonsillectomy haemorrhage, ONE is TRUE:

- ☒ A. Premedication with a sedative is necessary
- ☐ B. Endotracheal tube should be cuffed even in small children
- ☐ C. Blood loss should be replaced before induction of anaesthesia
- ☐ D. Aspiration via nasogastric tube is advisable in children before induction of anaesthesia
- ☐ E. Blood loss usually is visually estimated

69. Anaesthetic considerations in strabismus repair in a child include all the following EXCEPT:

- ☐ A. Suxamethonium can interfere with the muscle test stimulation for up to 20 minutes
- ☐ B. Surgical manipulation may elicit the oculocardiac reflex
- ☐ C. Patients are at increased risk for malignant hyperthermia
- ☒ D. Laryngoscopy and intubation are facilitated only by inhalational anaesthesia
- ☐ E. Postoperative nausea and vomiting are common

(70) All the following are patients inappropriate for outpatient surgery EXCEPT:

- ☒ A. Obese patients
- ☐ B. Formerly premature infants of less than 46 weeks postconceptual age
- ☐ C. Infants with respiratory disease
- ☐ D. Patients with recurrent respiratory tract infection
- ☐ E. Patients undergoing surgery with major blood loss

71. All the following may be an intracranial complication of spinal anaesthesia EXCEPT:

- ☐ A. Sixth cranial nerve compression
- ☒ B. Ninth cranial nerve compression
- ☐ C. Headache
- ☐ D. Subdural haematoma
- ☐ E. Herniation of brain stem

72. All the following are adverse CVS (cardiovascular system) effects of perioperative pain EXCEPT:

- ☐ A. Tachycardia ✓
- ☒ B. Decreased stroke volume X
- ☒ C. Increased cardiac work ✓
- ☐ D. Increased myocardial oxygen consumption
- ☐ E. Increased risk of DVT



73. A patient being mechanically ventilated in the ICU requires wound debridement twice daily. Each of the following agents would be appropriate for induction of brief general anaesthesia EXCEPT:

- A. N<sub>2</sub>O
- ☒ B. Etomidate
- C. Ketamine
- D. Methohexitone
- E. Midazolam

74. A patient receiving mechanical ventilation with an FIO<sub>2</sub> of 0.6 postoperatively has PaO<sub>2</sub> of 160 mmHg and PaCO<sub>2</sub> of 38 mmHg. One hour later with the same ventilation his PaO<sub>2</sub> is 150 mmHg and PaCO<sub>2</sub> is 48 mmHg. The MOST LIKELY cause of the change is:

- A. Metabolic acidosis
- B. Pulmonary embolism
- ☒ C. Increased body temperature
- D. Interstitial pulmonary oedema
- E. Aspiration pneumonia

75. All the following are contraindications to laparoscopic surgery EXCEPT:

- A. Increased intracranial pressure
- B. Hypovolaemia
- ☒ C. Overweight patient
- D. Patient with peritono-ventricular shunt
- E. Patient with congestive heart failure

GOOD LUCK

Final Exam P1

2009/1

THE ARAB BOARD FOR MEDICAL SPECIALIZATIONS  
SCIENTIFIC COUNCIL OF ANAESTHESIA



Handwritten signature and date: 26/10/09

Final exam - Paper One  
26<sup>th</sup> October, 2009  
9-11 A.M

NAME: .....

NUMBER: .....

CENTER: .....



**The Arab League**  
Council of Arab Health Ministers  
**The ARAB BOARD OF MEDICAL SPECIALIZATIONS**  
*Scientific council of Anesthesia*

**INSTURCTIONS FOR THE EXAM**

1. Mark your number and write your name
2. Be sure to give all papers (questions & answers sheets) to the supervisor before you leave the exam room. Any missing paper may oblige us to cancel your examination.
3. Time allowed: **TWO HOURS.**
4. You are not allowed to leave the examination hall before 30 minutes have passed.
5. If you have an urgent need to talk to the supervisor or to leave the room for any reason, you have to raise your hand (do not ever talk) until he comes and responds to your request.
6. Try to answer all the questions, as there is no penalty for wrong answers.
7. This book contains / / numbered pages. Verify the number of pages. Be sure that there are no repeated pages or missing ones.

This paper consists of 75 multiple-choice questions. There is only one correct answer for each question. Select the single most appropriate answer and mark it on the answer sheet.

**GOOD LUCK**

1- Which of the following is most closely related to slow-wave sleep?  
(SWS)

- NMS  
Q80/P85
- A- Dreaming
  - B- Atonia
  - ☒ C- Bed-wetting
  - D- High-frequency electroencephalogram (EEG) waves
  - E- Irregular heart rate

2- All the following opiate receptors are correctly matched with their physiological effect EXCEPT:

- A- Mu 1 - analgesia
- B- Mu 2 - sedation
- C- Kappa - spinal analgesia
- ~~D- Sigma - dysphoria~~
- ☒ E- Kappa - miosis

3- The major area of airway resistance during breathing is located in the:

- NMS  
Q12/P187
- A- Oropharynx
  - B- Trachea and large bronchi
  - ☒ C- Intermediate-sized bronchi
  - D- Bronchioles less than 2 mm in diameter
  - E- Alveoli

4- Stimulation of the high-pressure baroreceptors is associated with:

- A- An increase in cardiac contractility
- B- An increase in heart rate
- ☒ C- An increase in the discharge rate of vagal efferent cardiac neurons
- ~~D- A decrease in systemic blood pressure~~
- E- Stimulation of the vasopressor centre

5- The rate of lymph flow in human is approximately:

- NMS  
Q7/P140
- A- L/day
  - B- 100-200 ml/day
  - C- 10-20 ml/hour
  - ☒ D- 1-2 L/day
  - E- 1-2 ml/hour



6- Which of the following secretions is most dependent on vagal stimulation?

- NMS  
Q1/P328
- ☒ A- Saliva
  - ☐ B- Hydrochloric acid
  - ☐ C- Pepsin
  - ☐ D- Pancreatic juice
  - ☐ E- Bile

7- Which one of the following conditions causes a decrease in the extracellular fluid (ECF) volume, an increase in the intracellular fluid (ICF) volume and a decrease in the osmolar concentration of both compartments?

- NMS  
Q17/P
- ☐ A- Hyperosmotic dehydration
  - ☒ B- Hyposmotic dehydration
  - ☐ C- Isosmotic dehydration
  - ☐ D- Hyperosmotic overhydration
  - ☐ E- Hyposmotic overhydration

8- Which one of the following proteins is important for skeletal muscle contraction but not for smooth muscle contraction?

- NMS  
Q20/P84
- ☐ A- Actin
  - ☐ B- Myosin
  - ☒ C- Troponin
  - ☐ D- Myosin-adenosine triphosphatase (ATPase)
  - ☐ E-  $\text{Ca}^{2+}$  ATPase

9- Airway resistance can be reduced by EXCEPT:

- NMS  
Q15/P107
- ☐ A- Increasing vagal impulses to the lung -
  - ☐ B- Administration of beta-adrenergic blocking drug
  - ☐ C- Decreasing the radial traction exerted by lung tissue
  - ☐ D- Performing a maximal forced expiration
  - ☒ E- Increasing lung volume

10- Which of the following endocrine organs is larger at birth than in adulthood?

- NMS  
Q11/P48
- ☐ A- Hypophysis
  - ☐ B- Thyroid gland
  - ☒ C- Adrenal gland
  - ☐ D- Parathyroid glands
  - ☐ E- Endocrine pancreas

11- Which of the following statements best characterize potentiation?

- ☒ A- It occurs if a drug lacking an effect of its own increases the effect of a second, active drug
- B- It occurs if two drugs with the same effect, when given together, produce an effect that is equal in magnitude to the sum of the effects when the drugs are given individually
- ☒ C- It occurs if two drugs with the same effect, when given together, produce an effect that is greater in magnitude than the sum of the effects when the drugs are given individually
- D- It occurs if two drugs with the same effects, when given together, produce an effect that is equal in magnitude to the effect of each drug given alone
- ~~E- None of the above statements correctly characterizes potentiation~~

12- Pharmacological doses of glucocorticoids can result in all of the following effects EXCEPT:

- ☒ A- Stimulation of leukocyte migration
- B- Stabilization of lysosomal membranes
- C- Reduced activity of fibroblasts
- D- Reversal of histamine-induced increase in capillary permeability
- E- Inhibited antibody synthesis

13- Which of the following drugs, if given concomitantly with warfarin, would require an increase in warfarin dosage?

- A- Aspirin
- ☒ B- Barbiturates
- C- Disulfiram
- D- Phenylbutazone
- E- Trimethoprim-sulfamethazole

14- Characteristics of aspirin include all of the following EXCEPT:

- A- Its analgesic, antipyretic and anti inflammatory actions are due to inhibition of prostaglandin synthesis
- B- Toxic doses are capable of producing respiratory and metabolic acidosis
- C- It can increase mean bleeding time
- D- Excretion can be increased by alkalinizing urine
- ☒ E- Low doses increase urate excretion



15- Metoclopramide can be used to treat all of the following conditions EXCEPT:

- ☒ A- Diabetic gastroparesis
- B- Chemotherapy-induced vomiting
- C- Gastroesophageal reflux disease
- ☒ D- Peptic ulcer disease
- E- Radiation-induced vomiting

16- Preload can be reduced by all the following drugs EXCEPT:

- A- ACE inhibitors
- B- Nitrates
- C- Hydralazine
- ☒ D- Adenosine
- E- Thiazide

17- Anaesthesia machine checkout recommendation includes (among others) all the following EXCEPT:

- A- Manual emergency ventilation equipment
- B- Oxygen supply
- C- Leak free machine and breathing system
- ☒ D- Nitrous oxide supply
- E- Calibration of oxygen monitor

18- All of the following are physiological responses to airway manipulation EXCEPT:

- ☒ A- Laryngospasm is a forceful involuntary spasm of the laryngeal musculature caused by sensory stimulation of the recurrent laryngeal nerve
- B- Laryngoscopy leads to hypertension and tachycardia
- C- The haemodynamic changes caused by laryngoscopy can be attenuated by I. V. administration of fentanyl (0.5-1.0 microgram/Kg) 4-5 min before laryngoscopy
- ☒ D- Cardiac dysrhythmias during laryngoscopy usually indicate light anaesthesia
- E- Calcium channel blockers can be used to attenuate the transient hypertensive response associated with laryngoscopy

19- In an awake, healthy individual assuming the lateral position, all the following are true EXCEPT:

- A- The dependent lung has less ventilation
- B- The dependent lung has more perfusion
- ☒ C-  $V/Q$  ratio is lesser in the dependent lung
- ☒ D-  $PO_2$  is higher in the lower lung
- E-  $PaCO_2$  is lower in the lower lung

FRC

Helium Paper ONE

chlorine

N<sub>2</sub> washout

Body plethysmography

20- Closing capacity, one is true:

- A- Is normally higher than FRC. ✓
- B- Decreases in supine position. ✓
- C- Decreases with age. ✓
- D- Can be measured by body plethysmography
- E- Equals FRC in infants

by Single Breath N<sub>2</sub> washout  
by bolus technique

21- All the following are true concerning class Ia anti-arrhythmic drugs, EXCEPT:

- A- Slow depolarisation
- B- Prolong repolarization. ✓
- C- Increase the action potential duration.
- D- Are indicated for atrial arrhythmias
- E- Have local anaesthetic activity ✓

inert tracheal  
gas + Helium  
Xenon-oxygen

22- Ondansetron, all the followings are true, EXCEPT:

- A- Antagonises both peripheral and central 5HT<sub>3</sub> receptors
- B- Undergoes significant hepatic metabolism by hydroxylation
- C- Crosses the blood-brain barrier
- D- Is associated with cardiac arrhythmias. ✓
- E- Causes diarrhoea after prolonged usage

child - 2-3hr  
adult - 3-6hr  
in Chemoreceptor trigger zone

23- Sign of hemolytic transfusion reaction under general anesthesia include all the following EXCEPT:

- A- Hemoglobinemia
- B- Bronchospasm
- C- Hypotension
- D- Thrombus formation in large vessels
- E- Tachycardia

24- Decompression sickness, ONE is true:

- A- Is associated with a vascular necrosis of bone
- B- Is due to an alveolar oxygen deficit
- C- Is cured by breathing in a mixture of oxygen and helium
- D- It occurs, no matter the way of ascending.
- E- Is avoided if nitrogen is included in the inspired gas mixture. ✓



25- Pancreatitis is associated with all of the following, EXCEPT:

- A- Respiratory distress syndrome
- B- Hypocalcaemia
- C- Alcoholism
- D- Cholelithiasis
- E- Hyperlipidemia

26- In using general anesthesia for laparoscopic cholecystectomy, which is FALSE:

- A- Inhaled nitrous-oxide will diffuse into CO<sub>2</sub> containing spaces and increase their volume and pressure
- B- Decrease in FVC and FEV1 post operatively less than in open cholecystectomy
- C- Small but detectable CO<sub>2</sub> emboli are common
- D- Minute ventilation will need to be doubled
- E- Neuromuscular blockade should be optimum during gas inflation

27- Which of the following is NOT recommended during pheochromocytoma removal:

- A- Morphine
- B- Fentanyl
- C- Diazepam
- D- Desflurane
- E- Vecuronium

*avoid*  
 1- Succ  
 2- Halothane  
 3- morphine - pancuronium  
 4- atropine H<sub>2</sub> blockers  
 (atropine - morphine - meperidine)  
 5- droperidol etc. E. G.  
*best 2 drugs phen*  
 1- Vecuronium  
 2- Roc  
 3- propofol  
 4- clonidine

28- COPD patient has an altered induction with insoluble agent because of:

- A- Decreased cardiac output
- B- Increased perfusion
- C- Increased PCO<sub>2</sub>
- D- Uneven ventilation
- E- Decreased minute volume

29- Old age is associated with all of the following, EXCEPT:

- A- A decreased minimum alveolar concentration (MAC) value for volatile agents
- B- Resistance to non-depolarising drugs
- C- An increase in closing volume
- D- Sensitivity to morphine
- E- Decreased autonomic function and efficiency

30- Increased neonatal depression has been observed after cesarean section in ONE of the following:

- A- General anesthesia compared to regional anesthesia
- B- 8 minutes between induction and delivery
- C- Use of volatile agent
- ☒ D- 4 minutes between uterine incision and delivery
- E- Use propofol compared to thiopental

31- Maternal changes associated with preeclampsia include all the following EXCEPT:

- ☒ A- Increased cardiac output
- B- Decreased renal blood flow
- ☒ C- Decreased cerebral blood flow
- D- Decreased hepatic blood flow
- ☒ E- Increased in left ventricular end diastolic pressure

32- Regional anesthesia is contraindicated in ONE of the following:

- A- Vaginal delivery after cesarean
- B- Abruptio placentae
- C- Diagnosis of placenta previa
- D- Eclampsia
- ☒ E- Thrombocytopenia

33- Characteristic features of the myasthenic syndrome include all the following EXCEPT:

- ☒ A- Exercise improve the weakness.
- B- Decreased electromyogram (EMG) voltage
- C- Increase sensitivity to non-depolarising neuromuscular blocking drugs
- D- Post tetanic facilitation
- E- Fade of the EMG

34- The treatment of ventricular tachycardia under anaesthesia without hemodynamic change include all of the following EXCEPT:

- A- Lidocaine (lignocaine)
- B- Amiodarone
- C- Rapid digitalization
- D- Propranolol
- ☒ E- DC shock



35- The hazards of anaesthesia in a patient with chronic renal failure include all of the following EXCEPT:

- A- Left ventricular enlargement ✓
- B- Cardiac tamponade
- C- Hypertension ✓
- D- Pericarditis
- E- Enhanced carotid sinus activity

36- Chronic alcohol intake is associated with all of the following EXCEPT:

- A- Malnutrition ✓
- B- Mean corpuscular volume (MCV) of 90
- C- Decreased gastric motility ✓
- D- Decreased stress response to surgery
- E- Increased serum albumin ✓

37- Appropriate management of a female patient with untreated thyrotoxicosis requiring repair of an incarcerated femoral hernia includes:

- A- Intravenous propranolol ✓
- B- Intravenous carbimazole
- C- Spinal anaesthesia
- D- Atropine premedication
- E- Intravenous chlorpromazine

38- Concerning cerebral protection which of the following is NOT CORRECT:

- A- Thiopentone reduces cerebral oxygen consumption by up to 60%
- B- Thiopentone is ineffective if the insult is due to cardiac arrest ✓
- C- The effectiveness of thiopentone is due to a reduction in cerebral blood flow
- D- Thiopentone is more effective if given before the insult
- E- Calcium channel blockers are effective

39- The development of postoperative hypoglycaemia in a diabetic patient after amputation of an infected foot can result from:

- A- The decreased insulin requirement after amputation
- B- The stress response to surgery with release of glucagon
- C- The effect of protamine zinc insulin given 24 h before operation ✓
- D- Septicaemia
- E- Associated hypothermia

40- In patients with long standing Cushing's disease, all the following are associated with a high incidence of perioperative complications EXCEPT:

- A- Hypokalaemia -
- B- Muscle wasting
- C- Hypernatraemia-
- D- Hypertension ✓
- E- Diabetes mellitus

41- In a patient with sickle cell anaemia:

- A- Epidural analgesia is contraindicated ✓
- B- The haemoglobin concentration should be restored to normal levels prior to surgery.
- C- Plasma expanders are contraindicated ✓
- D- Bone pain heralds a sickle cell crisis ✓
- E- Preparation should be made for exchange transfusion of the neonate following delivery to a homozygous mother ✓

42- Postoperative respiratory micro-atelectasis is associated with ONE of the following:

- A- Decreased PaCO<sub>2</sub>
- B- Scattered areas of dullness on percussion over the chest
- C- Ground glass appearances on chest X-ray
- D- Use of opioids intra-operatively
- E- Bilateral basal crepitations on auscultation ✓

43- Patients with HELLP syndrome which is FALSE:

- A- Always have a thrombocytopenia
- B- Usually have pre-eclampsia -
- C- Usually have a normal APTT ✓
- D- Can present post-partum
- E- Should not have an epidural regional block .

44- Oxygen stores

- A- Are increased slightly by pre-oxygenation
- B- Are large because oxygen is so important for cellular function
- C- Depend in part on blood volume and haemoglobin concentration ✓
- D- Are large in pregnant women compared to non-pregnant women
- E- Can be accurately assessed with a pulse oximeter



45- Contraindications to the discharge home of a patient who had a hernia repair under general anaesthesia include all of the following EXCEPT:

- ☒ A- Nausea
- B- Inability to drink liquids without vomiting
- C- Heart rate 50% higher than the preoperative value
- D- Inability to walk due to groin pain
- E- Disorientation to person and place

46- A patient has chronic obstructive pulmonary disease requiring the constant administration of oxygen. He is dyspnoeic at rest and can walk at the most 20 ft before needing to rest. He is scheduled to undergo an exploratory laparotomy because of a small bowel obstruction. He would be classified by the American Society of Anesthesiologists as physical status

A- III

B- IIIE

☒ C- IVE

D- V

E- VE

47- The likelihood of intraoperative awareness under general anaesthesia is highest with the use of

- A- Inadequate benzodiazepine doses
- B- High-dose opioids
- ☒ C- Muscle relaxants
- D- No premedication
- E- Dexmedetomidine

48- Coronary perfusion pressure (CPP) is increased as a result of

- ☒ A- Increased diastolic blood pressure (DBP)
- B- Increased left ventricular end-diastolic pressure (LVEDP)
- C- Systolic hypertension
- D- Tachycardia
- ☒ E- Hypocapnia

49- The minimum number of platelets needed for surgical haemostasis is approximately

- A- 10,000/mm<sup>3</sup>
- ☒ B- 30,000/mm<sup>3</sup>
- C- 80,000/mm<sup>3</sup>
- D- 100,000/mm<sup>3</sup>
- E- 1,000,000/mm<sup>3</sup>

50- Hypertension during anaesthesia can be because of all the following EXCEPT:

- ☒ A- Hypocarbia
- B- Preexisting disease
- C- Increased intracranial pressure
- D- Aortic cross-clamping
- E- Drug interaction

51- The unspecific responses suggesting inadequate anaesthetic depth include all the following EXCEPT:

- A- Tachycardia
- B- Hypertension
- ☒ C- Miosis
- D- Sweating
- E- Tearing

52- When regional anaesthesia is compared to general anaesthesia for hip fractures it is associated with all of the following EXCEPT:

- ☒ A- Reduced post-operative morbidity
- B- Reduced blood loss
- C- Reduced risk of DVT
- ☒ D- Reduced hospital stay
- E- Better immediate postoperative pain relief

53- Causes of respiratory distress in the neonate Include all of the following EXCEPT:

- A- Unilateral choanal atresia
- B- A tracheo-oesophageal fistula
- C- A diaphragmatic hernia
- D- Necrotising enterocolitis
- ☒ E- A myelomeningocele



~~54-~~ Ankylosing spondylitis, which is FALSE:

- ☒ A- Occurs more frequently in women than men over the age of 40
- B- Is associated with low grade pyrexia
- C- Can present as sciatica
- D- Can be complicated by arthropathy affecting the hips
- E- Can be complicated by iritis

55- With regard to dental chair anaesthesia, all of the following are contraindicated EXCEPT:

- A- Sick cell anaemia
- B- Angina
- ☒ C- Dental abscess
- D- Breathing difficulties
- E- Down's syndrome

☒ 56- The clamping of the thoracic descending aorta in aneurysm repair is followed by

- C.V's
- A- Immediate hypotension
  - ☒ B- Immediate hypertension
  - C- Cardiac standstill
  - D- No change
  - E- Loss of blood pressure in the right arm

☒ 57- The blood flow during total cardiopulmonary bypass, which is TRUE

- C.V's
- A- Is not adjustable
  - ☒ B- Is virtually nonpulsatile
  - C- Provides a pulsatile pressure
  - D- Is a pulsatile flow
  - E- Mimics normal flow in all respects

☒ 58- The most reliable monitor for detection of intra-operative myocardial ischemia is

- C.V's
- A- Creatine phosphokinase levels
  - B- Pulmonary artery catheterization
  - ☒ C- Transoesophageal echocardiography
  - D- Troponin levels
  - E- Exhaled nitric oxide

59- A patient with oesophageal obstruction is to have a general anaesthetic for oesophagoscopy. He has had a barium swallow on the previous day. One of the greatest dangers of the planned procedure is

- A- Bleeding
- B- Hypotension
- C- Difficult intubation
- ☒ D- Aspiration
- E- Arrhythmia

60- Mild, accidental hypothermia during the course of major surgery may lead to significant increases in all of the following EXCEPT

- ☒ A- The effect on nondepolarizing muscle relaxant.
- B- The duration of stay in the anaesthetic recovery room.
- C- The incidence of post-operative wound infection.
- D- The incidence of post-operative myocardial ischaemia.
- ☒ E- The incidence of post-operative blood transfusion

61- All of the following consider as the most common complications of electro-convulsive therapy (ECT) EXCEPT:

- A- Dental damage. ✓
- B- Aspiration pneumonia. ✓
- C- Bronchospasm.
- D- Laryngospasm.
- ☒ E- Hypotension ✓

62- Concerning coronary blood flow one of the following is TRUE

- A- It is approximately 20% of the cardiac output at rest.
- B- It is highest during systole.
- C- It is reduced during hypoxia.
- D- Increased myocardial oxygen demand results in increased oxygen extraction but little increase in coronary blood flow.
- ☒ E- It is reduced in aortic stenosis.

63- All of the following intravenous fluids have an acidic pH EXCEPT

- A- Haemaccel
- ☒ B- 0.9% saline
- C- 5% glucose in water
- D- 4% glucose in 0.18% saline
- E- Hartmann's (compound sodium lactate)



64- During magnetic resonance imaging, one is TRUE:

- ☒ A- It is noisy ✓
- B- There is no risk of microshock through pulmonary artery catheters ✓
- C- Looped fibreoptic cables lead to problems with induced currents ✓
- D- Non-invasive blood pressure measurement is impossible ✓
- E- The magnetic field interferes with capnometry. ✓

65- Causes of pseudohyponatremia includes all the following EXCEPT

- A- Hyperlipidemia
- B- Hyperproteinemia
- ☒ C- Hypoglycemia ✓

~~D- Glycine therapy during TURP ✓~~

~~E- Administration of mannitol ✓~~

66- Features of the transurethral resection of the prostate (TURP) syndrome include all of the following EXCEPT

- A- Agitation ✓
- B- Angina ✓
- ☒ C- Bradycardia ✓
- D- Nausea ✓
- ☒ E- Tinnitus ✓

67- Nasotracheal intubation may be used safely in ONE of the following:

- A- Fractures of lower cervical spine and ethmoid bone
- ☒ B- A LeFort I fracture of the maxilla ✓
- C- A LeFort II fracture of the maxilla
- ☒ D- A LeFort III fracture of the maxilla ✓
- E- Non of the above

68- Surgical correction of scoliosis, all the following are true EXCEPT:

- A- Carries a risk of spinal cord damage ✓
- B- Is facilitated by induced hypotension ✓
- C- Is monitored by somatosensory evoked potentials ✓
- ☒ D- May involve division of the diaphragm ✓
- ☒ E- Usually requires postoperative ventilation for several days ✓

69- All the following are nephrotoxic, EXCEPT:

- A- Aminoglycosides ~
- B- Isoflurane ~
- C- Non-steroidal anti-inflammatory drugs (nsaids)
- ☒ D- Angiotensin converting enzyme inhibitor *pc. 5*
- E- Radiocontrast agents

70- All the following increase the risk of cauda equine syndrome (CES), EXCEPT:

- A- Old age
- B- The use of epidural adrenaline
- ☒ C- The lithotomy position
- ☒ D- Spinal cord manipulation
- E- Later stage ankylosing spondylitis

71- After the onset of one lung anaesthesia pulmonary vasoconstriction in the non-dependant lung is enhanced by ONE of the following:

- ☒ A- A low alveolar oxygen tension in that lung
- B- Inhalational anaesthetic agents
- C- Intravenous anaesthetic agents
- D- Metabolic alkalosis
- E- A constant intravenous sodium nitroprusside infusion

72- Indicate which is TRUE for stellate ganglion:

- ☒ A- Is a fusion of the inferior cervical and first thoracic ganglia
- B- Receives fibers from C4-C5
- C- Is primarily parasympathetic ganglions
- D- Lies at the level of the ~~C5~~ <sup>T1</sup> vertebra
- E- May be blocked with little complication

73- The paramedian approach of lumbar puncture, all the following are true EXCEPT:

- A- The needle penetrate the ligamentum flavum
- B- Lateral or sitting position is satisfactory
- C- The needle does not penetrate interspinous ligament
- ☒ D- It is necessary to flex the spine
- E- The needle enters between the laminae



2509/2

***THE ARAB BOARD OF MEDICAL SPECIALIZATIONS  
SCIENTIFIC COUNCIL OF ANAESTHESIA***

***Final exam - Paper Two  
26. October. 2009  
12-2 P.M***

**The Arab League**  
Council of Arab Health Ministers  
**The ARAB BOARD OF MEDICAL SPECIALIZATIONS**  
*Scientific council of Anesthesia*

**INSTURCTIONS FOR THE EXAM**

1. Mark your number and write your name
2. Be sure to give all papers (questions & answers sheets) to the supervisor before you leave the exam room. Any missing paper may oblige us to cancel your examination.
3. Time allowed: **TWO HOURS.**
4. You are not allowed to leave the examination hall before 30 minutes have passed.
5. If you have an urgent need to talk to the supervisor or to leave the room for any reason, you have to raise your hand (do not ever talk) until he comes and responds to your request.
6. Try to answer all the questions, as there is no penalty for wrong answers.
7. This book contains / / numbered pages. Verify the number of pages. Be sure that there are no repeated pages or missing ones.

This paper consists of 75 multiple-choice questions. There is only one correct answer for each question. Select the single most appropriate answer and mark it on the answer sheet.

**GOOD LUCK**



1- All the following are contraindicated in spinal anesthesia EXCEPT:

- MA 1103 up 8  
203 8.7.04
- A- Coagulopathy
  - B- Coronary artery disease \*
  - C- Bacteraemia
  - D- Hypovolemia
  - E- Demyelinated disease

2- Which of the following is the BEST to decrease cerebral oxygen requirement :

- A- Muscle relaxant
- B- Glucose solution
- C- Anticonvulsant
- D- Barbiturate \*
- E- Oxygen therapy

3- Treatment with mannitol may cause all the following EXCEPT:

- MA 1104  
232
- A- Initial hypervolemia
  - B- Increased urine volume
  - ~~C- Hypovolemia~~
  - D- Increased LVEDP (left ventricular end diastolic pressure) \*
  - E- A fall in arterial pressure

4- Nitrous oxide should be avoided in patients with:

- A- Brain tumor
- B- Subarachnoid hemorrhage
- C- Closed head injury
- D- Pneumocephaly \*
- E- Subdural hematoma

5- Dextrose- containing solutions in neurosurgical patients may lead to ONE of the following:

- A- Excessive diuresis
- B- Exacerbate hyperglycemia \*
- C- Produce brain edema
- D- Water retention
- E- Are the fluids of choice

- 6- Complication associated with the sitting position include:
- A- Sciatic and cranial trauma
  - B- Pneumocephalus
  - C- Quadriplegia
  - D- Airway edema
  - E- All mentioned above \*
- 7- Precordial Doppler ultrasonic transducer, used to detect air embolism. One is TRUE:
- A- Can not detect less than 5 ml of air
  - B- Should be placed over the right side of the heart \*
  - C- Is less sensitive than capnography
  - D- Is less sensitive than pulse oximetry
  - E- It is mandatory to be used in all neurosurgical surgery
- 8- The first sign of malignant hyperthermia in anesthetized infant is:
- A- Rapid rise in body temperature
  - B- Tachycardia \*
  - C- Hot skin
  - D- Arrhythmias
  - E- Hot circle absorber
- 9- The major factor associated with the closure of patent ductus arteriosus (PDA) in the newborn is:
- A- Increased PaCO<sub>2</sub>
  - B- Decreased PaCO<sub>2</sub>
  - C- Increased PaO<sub>2</sub> \*
  - D- Decreased PaO<sub>2</sub>
  - E- Increased pulmonary artery pressure
- 10- A 16-year-old Down syndrome patient, is admitted for dental extraction in preoperative preparation, one is TRUE:
- A- Atropine should be avoided
  - B- Opioid should be avoided
  - C- Neck mobility should be documented \*
  - D- Heavy sedation is required
  - E- Anticonvulsants should be withheld



11- In the cardiac output of the neonate, which is FALSE:

- A- May increase significantly by increase in stroke volume ✓
- B- Is very sensitive to changes in the afterload ✓
- C- Is very sensitive to volume loading ✓
- D- Is reflected by a leftward displacement of the cardiac function curve as compared to adult
- E- Is rate depending cardiac output ✓

12- The metabolic activity of a child:

- A- Is more than that of an adult
- B- Is highest in the first 2 years of life ✓
- C- Is increased by afebrile illness ✓
- D- Rises with onset of puberty
- E- All mentioned are true

13- Premature neonates tend to have all the following, EXCEPT:

- A- Are prone to develop hypocalcaemia
- B- Are sensitive to non-depolarising muscle relaxant drugs ✓
- C- Have reduced insensible water loss ✓
- D- Have increased plasma unconjugated bilirubin levels
- E- Are prone to develop apnoeic spells ✓

14- The likely results in an elderly, dehydrated man, breathing room air with prolonged bowel obstruction include all of the following EXCEPT:

- A- Respiratory alkalosis ✓
- B- Metabolic acidosis
- C- Hypoxaemia ✓
- D- Uraemia ✓
- E- Anaemia ✓

15- Patients with greater than normal risk of developing gram negative septicaemia include all the following EXCEPT:

- A- Diabetes mellitus
- B- Cirrhosis
- C- Leukaemia
- D- Uraemia
- E- Polycythaemia ✓


**16- Likely causes of surgical emphysema in patients with vomiting and abdominal pain and dyspepsia include:**

- A- Ruptured trachea
- B- Ruptured oesophagus \*
- C- Spontaneous pneumothorax
- D- Pulmonary embolism
- E- Ruptured larynx

**17- About The process of red cell transfusion which is FALSE:**

- A- The blood compatibility label must be checked to ensure that the blood is correct for the patient
- B- The bag should be inspected to ensure integrity of the plastic casing
- C- Blood left out of the blood fridge for longer than 15 min should be discarded\*
- D- The expiry date should be checked
- E- The volume of blood transfused should be recorded once administered

**18- All The following can be used to enhance endogenous antioxidant defenses EXCEPT:**

- 
- A- N-acetylcysteine
  - B- Ascorbic acid (vitamin C)
  - C- Albumin \*
  - D- Dimethylsulphoxide
  - E- Lazaroids

**19- Mixed venous oxygen saturation is reduced in all of the following EXCEPT:**

- A- Anaemia \*
- B- Hypothermia \*
- C- Sepsis \*
- D- Shivering
- E- Low cardiac output

**20- Hypofibrinogenaemia is associated with all of the following EXCEPT:**

- A- Amniotic fluid embolism ✓
- B- Incompatible blood transfusion ✓
- C- Septic abortion ✓
- D- Prostate resection ✓
- E- Patients receiving oral contraceptive therapy\*

21- In children, death due to severe burns on the second week after injury is often due to:

- A- Anaemia
- B- Hepatic failure
- C- Haemoconcentration
- D- Toxaemia from protein destruction
- E- Infection of the burned area \*

22- After placement of a pulmonary artery flotation catheter, All of the followings can be measured directly or derived EXCEPT:

- A- Oxygen consumption  $\dot{V}O_2$  (ml/min) ✓
- B- Systemic vascular resistance index (SVRI) ✗
- C- Pulmonary venous admixture or shunt fraction (QS/QT) ✓
- D- Left ventricular stroke work index
- E- Left ventricular end diastolic volume ✓

23- The following are indications for hyperbaric oxygen Therapy EXCEPT:

- A- Narcotising soft tissue infections
- B- Progressive myopia \*
- C- Decompression sickness
- D- Clostridia infections
- E- Carbon monoxide poisoning

24- The operation of the standard cylinder pressure gauge is based on the:

- A- Hagen-Poiseuille law ✗
- B- Fixed orifice principle ✗
- C- Bernoulli principle ✓
- D- Bourdon tube principle
- E- Critical flow rate principle ✗

25- Concerning a vapouriser for use inside the circle system, all the following are true EXCEPT:

- A- It must be temperature compensated
- B- It is better situated on the inspiratory limb
- C- Its internal volume must be greater than the patient's tidal volume \*
- D- Accurate calibration is essential
- E- It should be capable of delivering high concentrations of anaesthetic vapour



26- Trans-oesophageal echocardiography, which is FALSE:

- A- Is helpful in assessing myocardial contractility
- B- Is helpful in assessing myocardial ischaemic
- C- Can give an index of stroke volume
- D- Is useful for observing tricuspid regurgitation
- E- Can be used to measure intraventricular pressure changes

27- In non-invasive blood pressure measurement which is FALSE:

- A- The cuff width should be 20% greater than the arm diameter
- B- A too narrow cuff will tend to under read blood pressure
- C- There are five korotkoff sounds
- D- Doppler frequency shift occurs with blood flow
- E- An automated monitor detects pulsations within the cuff as it deflates to systolic pressure, which increases in amplitude until mean arterial blood pressure is reached

28- Inadequate analgesia over the radial artery at the wrist during brachial plexus block can be due to failure to block the:

- A- Radial nerve
- B- Medial cutaneous nerve
- C- Musculocutaneous nerve
- D- Median nerve
- E- Ulnar nerve

29- The dose of bupivacaine required for spinal anaesthesia is reduced in the pregnant patient at term because of decreased:

- A- CSF volume
- B- Spinal cord blood flow
- C- Metabolism of bupivacaine
- D- CSF pressure
- E- Turnover of CSF

30- The application of a topical anaesthetic agent to the pyriform fossa produces anaesthesia to the:

- A- Recurrent laryngeal nerve
- B- Glossopharyngeal nerve
- C- Hypoglossal nerve
- D- Superior laryngeal nerve
- E- Ansa hypoglossi

31- The pudendal nerve block provides analgesia to all of the following EXCEPT:

- A- Cervix
- B- Peroneal body
- C- Labia minora
- D- Labia majora
- E- Anterior vaginal wall

32- Concerning the anatomy of peripheral nerves:

- A- The lumbar plexus is derived from T12 to L4
- B- The cervical plexus is derived from C1, C2 and C3 spinal nerves
- C- The femoral nerve supplies the skin over the anterior aspect of the thigh
- D- The posterior tibial nerve is located between the lateral malleolus and the Achilles tendon
- E- The peroneal nerves (superficial and deep) supply the dorsum of the foot

33- Important landmarks to blockade of the median nerve at the elbow include the:

- A- Basilic vein
- B- Olecranon process
- C- Medial head of the triceps
- D- Brachial artery
- E- Cephalic vein

34- After a successful supraclavicular brachial plexus block, sensory anaesthesia will usually be incomplete on the:

- A- Medial aspect of the forearm
- B- Lateral aspect of the forearm
- C- Lateral aspect of the upper arm
- D- Medial aspect of the arm
- E- Back of elbow

35- The dermatome level at the nipple line is:

- A- C8
- B- T2
- C- T4
- D- T6
- E- T8

36- If a line is drawn around the neck at the level of the lower border of the cricoid cartilage, it will mark the level of the transverse process of the:

- A- Second cervical vertebra
- B- Third cervical vertebra
- C- Fourth cervical vertebra
- D- Fifth cervical vertebra
- ☒ E- Sixth cervical vertebra

37- Blood gas results showing PaO<sub>2</sub> 60 mmHg, PaCO<sub>2</sub> 30mmHg, pH 7.4 are consistent with:

- A- Compensated metabolic alkalosis
- B- Alveolar hypoventilation
- C- Pulmonary atelectasis
- D- Acute coronary occlusion
- E- Residence at high altitude for 48h

38- The likely complications of laparoscopy include all of the following EXCEPT:

- ☒ A- Pneumothorax
- ☒ B- Shoulder pain
- ☒ C- Gas embolism
- ☒ D- Aspiration
- ☒ E- Left bundle branch block

39- Causes of increased bleeding during head and neck surgery include all of the following EXCEPT:

- A- Hypoxia
- ☒ B- Hypocarbica
- C- Respiratory obstruction
- D- Chronic aspirin therapy preoperatively
- E- Transfusion of excessive quantities of blood

40- Concerning crush syndrome, all are true EXCEPT:

- A- Results from extensive tissue ischaemia
- B- Is seen in compartment syndrome
- C- Results in myoglobinuria
- D- May require deliberate acidification of the urine to prevent renal failure
- E- Commonly causes disseminated intravascular coagulation



41- Complications of a subtotal thyroidectomy include all of the following EXCEPT:

- A- Aphonia
- B- Asphyxia
- C- Recurrence of thyrotoxicosis ✓
- D- Myxoedema
- E- Hypercalcaemia ✗


42- An elderly patient with obstructive jaundice is admitted to the ICU following percutaneous biliary stenting. The temperature is  $39.5^{\circ}$ , the hemodynamic values are HR = 120 bpm, BP = 80/40 mmHg, CVP = 1 mmHg, PAP = 20/5 mmHg, PAOP = 4 mmHg, CI = 2 L/min/m<sup>2</sup>, the intervention that should be performed first is:

- A- Calculation of SVR ✓
- B- Volume resuscitation ✗
- C- Administration of dopamine ✓
- D- Administration of phenylephrine ✓
- E- Administration of broad-spectrum antibiotics ✓

43- A 30-year-old construction worker is admitted to the ICU with multiple traumatic injuries. 2 days following admission, he becomes anuric with a serum CPK level equal to 30000 U/L. expected finding include all the following EXCEPT:

- A- Hyperkalemia ✓
- B- Metabolic acidosis ✓
- C- Hypophosphatemia ✗
- D- Muscle necrosis ✓
- E- Positive urine myoglobine ✓

44- The treatment of the previous patient in question 118 includes all of the following EXCEPT:

- 
- A- Urine alkalinization ✗
  - B- Osmotic diuresis ✗
  - C- Calcium administration ✓
  - D- Fluid restriction ✗
  - E- Dialysis ✓

45- The neurologic symptom in a patient with a blood carboxyhemoglobine level of 50% is:

- A- Headache 10%
- B- Nausea 20%
- C- Confusion 30% (40% cerebral dysfunction)
- \* D- Coma 50%
- E- Death 60%

46- Therapies which may diminished mortality rate in severe sepsis include :

- A- Activated protine C
- B- Strict glycemic controle
- C- Early fluid resuscitation \*
- \* D- Hydrocortisone
- E- All are correct .

47- The addition of continuous positive airway pressure (CPAP) into the breathing system causes an increase in all of the following EXCEPT :

- A- FRC
- B- Static compliance of the lung
- C- Dynamic compliance of the lung
- D- Airway conductance
- \* E- Work of breathing

48- Patients in diabetic coma can have all the following EXCEPT:

- A- Lactic acidosis
- B- Hyperosmolarity
- C- Ketoacidosis
- D- Hyperlipidaemia
- \* E- Hypocalcaemia

49- An asthmatic patient develops acute bronchospasm at the end of an operation for the repair of an umbilical hernia. The possible causes include all the following EXCEPT:

- A- Use of neostigmine to reverse the neuromuscular blockade
- B- A light level of anaesthesia \*
- C- Irritation of the respiratory tree by the tracheal tube
- D- Use of isoflurane during the anaesthetic
- E- Morphine administration at the end of operation

50- When the patient temperature is 32 C all the following problems may be expected EXCEPT:

- A- Metabolic alkalosis
- B- Impairment of intrinsic clotting cascade
- C- Cardiac dysrhythmias
- D- Platelets dysfunction
- E- Profound peripheral vasoconstriction

51- Signs of a haemolytic transfusion reaction Include all the following, EXCEPT:

- A- Bronchospasm.
- B- Pyrexia
- C- Hypertension
- D- An increase in capillary bleeding
- E- Periorbital oedema

52- Pheochromocytomas associated with all of the following, EXCEPT:

- A- Are noradrenaline secreting tumours
- B- Can occur anywhere along the sympathetic chain
- C- Are usually benign
- ☒ D- Increased blood volume
- E- Produce excessive amounts of adrenaline

53- Reliable indicators of tissue oxygenation include ONE of the following:

- A-  $p\text{CO}_2$  of arterial blood
- B-  $p\text{H}$  of arterial blood
- C-  $\text{PO}_2$  of arterial blood
- D-  $p\text{H}$  of venous blood
- ☒ E-  $\text{PO}_2$  of venous blood

54- Which is FALSE concerning jugular venous oxygen saturation monitoring:

- A- Assesses global oxygen extraction
- B- Catheter need to be in the jugular bulb
- C- Detect only a single hemisphere
- ☒ D- Is unaffected by changes in oxygenation of systemic blood
- E- It depends on measurement of partial pressure and saturation of oxygen



55- This ECG (Lead V5) most likely represents



- A- Wolff-Parkinson-White (WPW) syndrome
- B- Atrial fibrillation
- C- Complete heart block
- D- Atrio-ventricular junctional rhythm
- E- Sinoatrial block

56- The following nerves are solely motor in function EXCEPT:

- A- Oculomotor nerve.
- B- Abducens nerve.
- C- Genitofemoral nerve.
- D- Glossopharyngeal nerve.
- E- Spinal accessory nerve.

57- One of the following statements is TRUE with respect to the autonomic nervous system:

- A- The vagus nerve conveys afferent pain fibers.
- B- Post ganglionic sympathetic nerves are myelinated.
- C- All postganglionic sympathetic nerve terminals have adrenaline as neurotransmitter.
- D- Some preganglionic sympathetic fibers directly innervate their target organs.
- E- The cranial parasympathetic outflow arises solely in the medulla oblongata.

58- One of the following symptoms and signs is produced by voluntary hyperventilation:

- A- Carpopedal spasm
- B- Acidosis
- C- Increased cerebral blood flow
- D- Peripheral vasodilatation
- E- decreased cardiac output

59- All of the following solutions are isotonic EXCEPT:

- A- 0.9% saline
- B- 5% glucose
- C- 4% glucose and 0.18% saline
- D- Mannitol 10%
- E- Hartmann's solution

60- All of the following are signs for ARDS EXCEPT:

- A- Increase venous admixture
- B- Increase dead space-ventilation
- C- Decreased  $\text{PaCO}_2$
- D- Decrease lung compliance
- E- PCWP more than 18mmHg

61- The following statements regarding the anion gap are correct EXCEPT:

- A- The cations used in the calculation of the anion gap are sodium and potassium
- B- The anions used in the calculation of the anion gap are chlorides and phosphates
- C- The normal anion gap is between 10 and 18 mmol/L
- D- Lactic acidosis causes a metabolic acidosis with a high anion gap
- E- Renal failure causes a metabolic acidosis with a high anion gap

62- One of the following occur as a response to major surgery:

- A- Enhanced natriuresis
- B- Hyperglycaemia
- C- Reduced lipolysis
- D- Increased peripheral glucose uptake
- E- Potassium retention

63- ECG changes in hypokalaemia include all of the following EXCEPT:

- A- Reduced P wave
- B- Widened QRS complex
- C- Prolonged QT interval
- D- Reduced height of T wave
- E- Increased height of U wave

64- Storage of blood for transfusion causes ONE of the following:

- A- Raised pH ✓
- B- Raised PCO<sub>2</sub> ✓
- C- Raised plasma bicarbonate ✗
- D- Raised plasma dextrose ✓
- E- Raised 2,3-Diphosphoglycerate

65- Day case surgery is characterized by all the following EXCEPT:

- A- Lower incidence of infection
- B- Lower incidence of respiratory complications
- C- Lower overall costs ✓
- D- Same preoperative laboratory testing as compared to hospitalized patients
- E- Same safety compared to hospitalized patients

66- Placing an internal jugular catheter during a posterior fossa surgery in the sitting position, one is TRUE:

- A- Is absolutely contraindicated
- B- Neck veins should not be used ✓
- C- A skillfully placed catheter is often acceptable
- D- Head-down posture to facilitate placement is always desirable ✗
- E- Brachial veins should always be used ✗

67- The most common complication seen in the recovery room is:

- A- Mild to moderate hyperthermia
- B- Emergence excitement ✓
- C- Bronchospasm ✓
- D- Mild to moderate hypothermia ✓
- E- Cardiac arrhythmias

68- Bradycardia during ophthalmic surgery can be due to the followings EXCEPT:

- A- Pressure on the eye
- B- Traction on external muscles of the eye ✓
- C- Retrobulbar local anaesthesia ✓
- D- High concentration of halothane ✓
- E- Corneal incision ✗



69- During one-lung ventilation, the amount of perfusion to the nondependent lung is determined by all of the following EXCEPT:

- 69- ☒ A- The degree of hypoxic pulmonary vasoconstriction in the nondependent lung  
B- The degree of hypoxic pulmonary vasoconstriction in the dependent lung  
C- Surgical manipulation of the nondependent lung  
D- Method used to ventilate the dependent lung  
E- The preoperative condition of the dependent lung

70- Concerning cardiopulmonary bypass, which is TRUE:

- 70- ☒ A- Hyperoxia is desirable during hypothermic bypass  
B- During hypothermia, blood viscosity remains unchanged  
C- During rewarming, rectal, tympanic, and esophageal temperatures rise in that order  
D- Systemic air embolism may be caused by unexpected resumption of the heart beat  
E- In the absence of antithrombin III factor in the patient's blood, heparin sensitivity is observed

71- In patients undergoing coronary artery bypass graft surgery, rapid protamine administration MOST likely will decrease, one of the following:

- 71- A- Myocardial contractility  
B- Cardiac index  
C- Pulmonary vascular resistance  
D- Systemic vascular resistance  
E- LVSWI (Left ventricular systolic work index)

72- All these medical problems, when present in patient undergoing cataract surgery, are relative contraindications to regional anesthesia with light sedation EXCEPT:

- 72- A- Chronic cough  
B- Shortness of breath when lying flat  
C- Aspirin therapy  
D- Parkinsonian head tremor  
E- Alzheimer disease

73- During Eye surgery under eye block:

- 73- A- Propofol infusions may be necessary  
B- The patient should be asleep to relieve anxiety  
C- The patient should be aware, calm and cooperative during the procedure  
D- Dentures should be removed  
E- Movements are allowed

74- All the following statements concerning Aprotinin are true EXCEPT:

- A- It may cause hypersensitivity responses ✓
- B- It reduces the inflammatory response following extracorporeal circulation ✓
- C- It may be administered intravenously as a bolus injection ✓
- D- It reduces bleeding following open heart surgery ✓
- E- It inhibits plasmin and plasmin-activator ✓

75- Tetralogy of Fallot exhibits the following EXCEPT:

- A- Pulmonary stenosis
- ✗ B- Atrial septal defect
- C- Right ventricular hypertrophy
- D- The aorta overrides the right ventricle
- E- Ventricular septal defect

GOOD LUCK

2

THE ARAB BOARD FOR MEDICAL SPECIALIZATIONS  
SCIENTIFIC COUNCIL OF ANAESTHESIA

Final exam - Paper One  
22 September 2010  
9-11 A.M

NAME: .....

NUMBER: .....

CENTER: .....

(13)



The Arab League  
Council of Arab Health Ministers  
The ARAB BOARD OF MEDICAL SPECIALIZATIONS  
*Scientific council of Anesthesia*

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1. Mark your number and write your name
2. Be sure to give all papers (questions & answers sheets) to the supervisor before you leave the exam room. Any missing paper may oblige us to cancel your examination.
3. Time allowed: TWO HOURS.
4. You are not allowed to leave the examination hall before 30 minutes have passed.
5. If you have an urgent need to talk to the supervisor or to leave the room for any reason, you have to raise your hand (do not ever talk) until he comes and responds to your request.
6. Try to answer all the questions, as there is no penalty for wrong answers.
7. This book contains ~~16~~ numbered pages. Verify the number of pages. Be sure that there are no repeated pages or missing ones.

This paper consists of 75 multiple-choice questions. There is only one correct answer for each question. Select the single most appropriate answer and mark it on the answer sheet.

GOOD LUCK

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5. If you have an urgent need to talk to the supervisor or to leave the room for any reason, you have to raise your hand (do not ever talk) until he comes and responds to your request.
6. Try to answer all the questions, as there is no penalty for wrong answers.
7. This book contains 164 numbered pages. Verify the number of pages. Be sure that there are no repeated pages or missing ones.

This paper consists of 75 multiple-choice questions. There is only one correct answer for each question. Select the single most appropriate answer and mark it on the answer sheet.

GOOD LUCK

9- Rocuronium, all the followings are true, EXCEPT:

- ☒ A. It is an analogue vecuronium
- ☐ B. The onset of blockade may occur in 60 sec
- ☐ C. It does not affect cardiac output
- ☐ D. Is metabolized by both hepatic and renal pathway
- ☒ E. Its antidote (sugammadex) reverses only rocuronium blockade

10- If oxygen is added to inspired air to increase its partial pressure from 20 kPa (150 mmHg) to 60 kPa (450 mmHg):

- ☐ A. Dissolved oxygen will increase approximately five-fold
- ☐ B. The oxygen content of the blood will increase approximately three-fold
- ☐ C. The  $P_{a}N_2$  will remain the same
- ☐ D. The  $p_{a}O_2$  will increase approximately three-fold
- ☐ E. Hypercarbia will be prevented

11- Concerning pulmonary function tests one of the followings is FALSE;

- ☐ A. FEV1 is low in small airway disease
- ☐ B. FEV1 is also effort dependent
- ☐ C. The flow-volume loop can identify the source of airway obstruction
- ☒ D. The diffusing capacity of the lung for carbon monoxide is decreased in emphysema
- ☐ E. FEV1 and PEF can be used to assess the reversibility of airway obstruction

12- Methaemoglobinaemia, all true EXCEPT;

- ☐ A. May be caused by prilocaine
- ☐ B. May be beneficial in cyanide toxicity
- ☐ C. Is effectively treated by methylene blue
- ☒ D. Will not change the partial pressure of oxygen in blood
- ☐ E. Is seen in carbon monoxide poisoning

13- Third generation cephalosporins, all true EXCEPT;

- ☐ A. In general are active against gram +ve cocci
- ☐ B. In general are active against Escherichia coli, Klebsiella and Proteus mirabilis
- ☐ C. May be nephrotoxic in combination with aminoglycosides
- ☐ D. May have disulfiram like action
- ☒ E. Is the drug of choice for prophylaxis against bacterial endocarditis



14- Regarding nitrates, all true EXCEPT;

- A. They are nitric oxide donors
- B. They increase the level of intracellular cyclic GMP
- ☒ C. They have an onset of action faster than that of sodium nitroprusside
- D. They may cause methaemoglobinaemia
- E. Tolerance may developed

15- Which of the following conditions is LEAST likely to be a cause of Lactic Acidosis?

- A. Severe Sepsis.
- B. Cardiogenic Shock.
- C. Carbon Monoxide poisoning.
- D. Midazolam overdose.
- ☒ E. Ethanol poisoning

16- The cardiopulmonary resuscitation, which is TRUE:

- A. Dobutamine is effective as adrenaline
- ☒ B. End-tidal co2 is useful predicting effectiveness
- C. Sodium bicarbonate should be given without delay
- D. Calcium administration improves outcome
- E. Cardiac output is approximately 75% of normal during cpr

17- What is the appropriate tidal volume to use in patients with ARDS?

- A. 4 - 5 ml/kg body weight.
- ☒ B. 6 - 8 ml/kg body weight.
- C. 9 - 10 ml/kg body weight.
- D. 10 - 12 ml/kg body weight.
- E. 12 - 14 ml/kg body weight.

18- The elimination half life of carbon monoxide when breathing 100% oxygen at (2 ) ATM atmospheric pressure is approximately:

- A. 150 minutes.
- B. 120 minutes.
- C. 90 minutes.
- D. 60 minutes.
- ☒ E. 30 minutes.

19- Septic shock, which is TRUE:

- A. Lung damage is usually widespread
- B. Large tidal volume is required to maintain ventilation
- ☒ C. Pulmonary hypertension is a feature
- D. Fluid administration should be guided by pulmonary artery pressure
- E. There is reduced production of nitric oxide

20- Problem in severely burnt patients include ONE of the followings:

- A. Increased sensitivity to non-depolarising muscle relaxants
- ☒ B. Hyperthermia
- C. Hypoglycemia
- ☒ D. Non cardiac pulmonary oedema
- E. They require 25 kcal/kg/day as nutrition

21- With regard to the gut and multiple organ failure, which is TRUE?

- A. High gastric intramural PH is a bad prognostic feature
- B. Administration of broad spectrum antibiotics invariably diminishes bacterial invasion through gut
- ☒ C. Splanchnic hypoperfusion is characteristic
- D. Noradrenaline is more beneficial than dobutamine
- E. Nitric oxide therapy will increase pathogenic invasion

22- ONE of the following would make diagnosis of brain death unacceptable:

- ☒ A. Residual activity on an EEG
- ☒ B. Limb movement
- C. Pupils fixed but not widely dilated
- D. No pupil reaction in response to irrigation of the ipsilateral ear with ice-cold water
- E. Normothermia

23- The most common laboratory abnormality in the patient receiving TPN is :

- A. Hypoglycemia
- B. Hyperlipidemia
- C. Hyperphosphatemia
- ☒ D. Elevated hepatic transaminase
- E. Hypocalcemia

24- The neurologic symptom in a patient with a blood carboxyhemoglobin level of 50% is

- A. Headache
- B. Nausea *vomiting*
- C. Confusion
- ☒ D. Coma
- E. Death

25- Intrinsic (auto) positive end expiratory pressure (PEEP) all the following are true EXCEPT:

- A. Can be achieved by reversing the I:E ratio
- B. It results in air trapping when compared to extrinsic PEEP
- ☒ C. It is very difficult to be monitored in ITU patients.
- D. Has the same effect as extrinsic PEEP on haemodynamic values
- E. Requires an extra work of breathing to initiate a spontaneous breath.

26- The immediate management of hyperthermia due to severe exercise includes all the followings, EXCEPT:

- A. Immediate cooling
- ☒ B. Aspirin
- C. Ice packs on extremities.
- D. Dantrolene in severe cases.
- E. Cold I.V. crystalloid

27- Patients in diabetic coma can have all the following EXCEPT:

- A. Lactic acidosis
- B. Hyperosmolarity
- C. Ketoacidosis
- ☒ D. Hyperlipidaemia
- E. Hypocalcaemia

28- DC cardio-version is indicated for all the following, EXCEPT:

- A. Supraventricular tachycardia
- B. Ventricular tachycardia
- C. Atrial fibrillation
- ☒ D. First degree heart block
- E. Atrial flutter



29- As a flow directed pulmonary artery catheter is inserted, you would expect to observe all of the following EXCEPT

- A. Right atrial pressure of 8 mmHg
- B. Right ventricular systolic pressure of 25 mmHg
- C. Pulmonary artery systolic pressure of 25 mmHg
- ☒ D. Pulmonary artery diastolic pressure lower than right ventricular diastolic pressure
- E. Wedge pressure of 10 mmHg

30- The calcium channel blocking drugs

- A. Are membrane stabilizing antiarrhythmics
- B. Have a peak effect in about 3 minutes after intravenous administration
- C. Are poorly bound to plasma protein
- ☒ D. Interfere with the flow of calcium ion through cellular membranes
- E. Are all about equally effective

31- A patient with obstructive lung disease (COPD) has an altered anesthetic induction with an insoluble agent because of

- A. Decrease cardiac output
- B. Increase perfusion
- C. Increased  $PCO_2$
- ☒ D. Uneven ventilation
- E. Decreased minute volume

32- Jaundice may result from all of the following EXCEPT

- A. Excessive production of bilirubin
- ☒ B. Increased uptake of bilirubin into hepatic cells
- C. Intrahepatic duct obstruction
- D. Defects in bilirubin conjugation
- E. Gilbert's disease

33- Sufentanil, ONE is true :

- A. Is less potent than fentanyl
- ☒ B. Is more fat soluble than fentanyl
- C. Is redistributed to terminate its effect when given in high doses for cardiac surgery
- D. Causes more histamine release than fentanyl
- E. Produces burst suppression on eeg at high doses

MC14 34- Post operative pain control with methadone, ONE is true :

- A. Is limited by its short half-life
- B. Is more effective with oral administration
- C. Is used on an every 2 hour regimen
- ☒ D. May take 48 hours to obtain a stable effect
- E. Does not depress respiration

729  
1361  
Band

35- The oxygen tanks on an anesthesia machine are, ONE is true :

- A. G tanks
- B. M tanks
- ☒ C. E tanks
- D. D tanks
- E. B tanks

682

36- When succinylcholine is administered in a dose of 1 mg/kg, one may expect all of the following EXCEPT

- A. An intraocular pressure increase
- B. An increase in intragastric pressure
- ☒ C. Bradycardia
- ☒ D. Hypertension after multiple doses in adults
- E. Hyperkalemia in paraplegic patients

37- Factors that will potentiate nondepolarizing neuromuscular blockade include all of the following EXCEPT

- A. Respiratory acidosis
- ☒ B. Large body surface area burn
- C. Administration of volatile anesthetic
- D. Hypothermia
- E. Hypermagnesemia

Res 20

MC14 38- Dantrolene, one is TRUE :

- A. Has a half-life of about 36 hours
- ☒ B. Reduces levels of intracellular calcium
- C. Causes marked cardiac depression
- D. Should be administered daily for 3 days after an episode of malignant hyperthermia
- E. Causes nephrotoxicity

Res 20  
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coursing for 24 hrs

39- Factors contributing to increased airway pressure under anaesthesia include all of the following EXCEPT

- ☒ A. Ketamine infusion
- B. A decrease in functional residual capacity
- C. The supine position
- D. The presence of an endotracheal tube
- E. Controlled ventilation

40- Humidification of inhaled air or gases, one is true:

- A. More efficient with an endotracheal tube in place
- B. Increased with the administration of atropine
- C. More efficient in an open system than a closed system
- ☒ D. At its optimum with the patient breathing through his nose
- E. At its optimum with the patient breathing through a tracheostomy

41- Lorazepam may produce all of the following EXCEPT

- ☒ A. Extrapyramidal effect
- B. Decrease anxiety
- C. Sedation
- D. Respiratory depression
- E. Amnesia

42- The lifetime of a canister of soda lime

- ☒ A. Depends on the method of filling
- B. Is independent of the volume of CO<sub>2</sub> exhaled
- C. Is independent of the location of the relief valve
- D. Is prolonged by low gas flows
- E. Is prolonged by channelling

43- The 'bleeding time' is increased in:

- A. Haemophilia
- B. Idiopathic thrombocytopenic purpura \*
- C. Coumarin overdose
- D. Low molecular weight heparin overdose
- ☒ E. Acetaminophen

27  
Board 49

27



44- In a patient who has had a traumatic quadriplegia for one week, all true EXCEPT:

- A. Intermittent positive pressure ventilation can cause hypotension
- B. Suxamethonium sensitivity occurs
- C. Retention of urine occurs
- D. Increased tendon jerks occur
- ☒ E. Steroids improve prognosis

45- HELLP syndrome complicating pregnancy means the following EXCEPT:

- ☒ A. H for hepatic
- ☒ B. E for expected
- C. L for liver enzymes
- D. L for low
- E. P for platelets

46- All the following poisons are matched to the appropriate therapy EXCEPT:

- A. Carbon monoxide-Hyperbaric oxygen
- B. Organophosphates-Atropin and pralidoxime
- C. Beta blocker-Phentolamine
- ☒ D. Methanol-Ethanol
- E. Tricyclic antidepressants-Phenytoin

47- The systemic inflammatory response syndrome (SIRS) is diagnosed by the presence of two or more of the following features EXCEPT:

- A. Temperature of  $>38^{\circ}\text{C}$  or  $<36^{\circ}\text{C}$
- ☒ B. Organ dysfunction
- C. Heart rate of  $>90/\text{minute}$
- D. Respiratory rate of  $>20/\text{minute}$  or a  $\text{PaCO}_2 < 4.3 \text{ kPa}$  (32 mmHg)
- ☒ E. White cell count of  $>12 \times 10^9/\text{L}$

48- In patients with acute lung injury (ALI) needing ventilation, all the following are true EXCEPT:

- A. Limitation of plateau pressure to less than 35 cm H<sub>2</sub>O and using a smaller tidal volume (up to 8 ml/kg)
- B. Permissive hypercarbia with respiratory acidosis not less than pH 7.2
- C. Use of volume control ventilator
- ☒ D. High PEEP to 10-12 cm H<sub>2</sub>O and avoidance of use FiO<sub>2</sub> above 0.6
- E. I:E ratio of 1:1 to improve distribution of gas within the lung

49- Techniques which are thought to reduce the incidence of ventilation associated pneumonia (VAP) include all the following EXCEPT:

- A. Aseptic technique when suctioning patient
- ☒ B. Nursing the patient in a complete flat position
- C. Avoiding H2 agonist or proton pump inhibitor
- D. Establishing an early nasogastric feeding
- E. Ensuring that the cuff of the endotracheal tube is correctly inflated

50- All the following are some of the criteria for starting mechanical ventilation in the ICU EXCEPT: .

- A. Respiratory rate of  $>28$ /minute or  $<8$  breaths/minute
- B. Exhaustion with laboured pattern of breathing
- ☒ C. Hypoxia,  $\text{SaO}_2$ , 90% on oxygen
- D. Hypercarbia,  $\text{PaCO}_2$  of  $>60$  mmHg
- ☒ E. Decreasing conscious level

51- patient with heparine-induced thrombocytopenia type II who present with acute pulmonary embolus, should receive ONE of the following anticoagulant medication :

- A. Enoxiparine .
- B. Warfarine .
- C. Aspirine .
- ☒ D. Argatroban .
- E. No anticoagulant is necessary .

52- Application of appropriate PEEP in the patient with ARDS achieve all the following EXCEPT

- ☒ A. Decreased total lung water .
- B. Improved lung compliance.
- C. Decreased intrapulmonary shunting .
- D. Diminished alveolar overdistention .
- E. Improved arterial oxygenation .

53- All of the following statements concerning the Glasgow Coma Scale (GCS) are true EXCEPT

- A. Indicates the severity of head injury
- B. May be used as a prognostic guide
- ☒ C. It is applicable only to adult
- D. If the patient's best motor response is flexion to pain, this scores 3 points
- E. It is now used for all types of coma

54- Concerning Cerebral blood flow (CBF), all are true EXCEPT

- A. Is decreased by acute hypocapnia (arterial  $\text{CO}_2$  30 mmHg)
- B. Changes affect ICP when brain compliance is low (brain stiffer or less squashy)
- ☒ C. Is decreased by inhalation volatile agents
- D. Is unaltered directly by opioids
- E. Is decreased by the hypnotic agent thiopentone

55- Complications of retrobulbar blockade for cataract surgery include all EXCEPT

- ☒ A. Tachycardia
- B. Retinal detachment
- C. Brain stem anaesthesia
- D. Vitreous haemorrhage
- E. Optic nerve damage

56- One of the following statements concerning Epiglottitis is TRUE

- A. Is commonest in children between six months and three years
- B. There may be no systemic upset in the child
- C. Cannulation is mandatory before attempting to control the airway
- D. Staphylococcus is the usual causative organism
- ☒ E. Intubation for 24 hours is usual

57- Concerning Porphyria, all are true EXCEPT :

- A. Can be induced by alcohol, diet and pregnancy.
- B. Is characterised by the induction of the enzyme d-aminolaevulinic acid synthetase
- C. Anaesthesia does not induce the erythropoietic forms of the disease
- ☒ D. The use of tourniquets is contraindicated
- ☒ E. Barbiturate drugs must be avoided

58- Concerning malignant hyperthermia during anaesthesia, one of the following is TRUE

- A. Sevoflurane is not a precipitant
- B. The incidence is about 1 in 50,000 anaesthetics
- ☒ C. Inheritance is by an autosomal dominant mechanism
- ☒ D. Mannitol is added to vials of dantrolene to aid management of haemoglobinuria
- E. Profound muscle weakness can result from the effect of dantrolene on calcium transport



59- One of the following statements concerning a patient with severe mitral stenosis is TRUE

- A. Sinus rhythm is critical since atrial contraction contributes 60% of ventricular filling
- B. If a-v pacing is required a short P-R interval is appropriate
- C. Afterload reduction is appropriate even if systemic blood pressure is normal
- D. Increased pulmonary vascular resistance is not a likely problem
- ☒ E. There will be often a marked discrepancy between PA diastolic and PA wedge pressures

60- With regard to Aortic Stenosis, one is TRUE

- A. Severe aortic stenosis will always be symptomatic
- ☒ B. A gradient of  $>80\text{mmHg}$  across the aortic valve is considered to be severe aortic stenosis
- C. Spinal anaesthesia is safe in patients with aortic stenosis
- D. With increasing severity of aortic stenosis, the louder the murmur becomes
- E. If a vasoconstrictor is required in a patient with aortic stenosis, ephedrine is the agent of first choice

61- The following are true on the subject of burns EXCEPT

- ☒ A. The commonest cause of death following a burns injury is smoke inhalation
- B. Full-thickness burns are less painful than partial thickness burns
- ☒ C. Prophylactic antibiotics should be given to all patients with  $>30\%$  burns
- D. The Parkland formula (used to guide fluid replacement in burns patients) is as follows: 2-4mls fluid per % burn per kg of weight
- E. A patient with signs of airway compromise should be intubated early

62- Features of pyloric stenosis include all the followings EXCEPT:

- A. Present frequently between 3 and 6 weeks of age
- B. Loss of gastric HCl
- C. Metabolic alkalosis
- D. Dehydration
- ☒ E. Respiratory alkalosis

63- True statement concerning congenital diaphragmatic hernia include all the followings EXCEPT:

- A. The degree of hypoplastic lung tissue is an important indicator for prognosis
- B. Awake intubation is a good choice for securing the airway
- C. Positive pressure ventilation by mask should be avoided
- D. The development of pneumothorax in the contralateral lung to the hernia is a frequent complication
- ☒ E. The arterial hypoxemia usually seen is due to severe ventilation-perfusion mismatch in the abnormal lung

64- Anesthetic consideration in strabismus surgery include all the followings, EXCEPT:

- A. Exists increase susceptibility to malignant hyperthermia
- B. Oculo-cardiac reflex occurs during surgery
- ☒ C. Oculo-gastric reflex predisposes to development of post operative vomiting
- ☒ D. Administration of preoperative of droperidol will prevent postoperative vomiting
- E. The afferent limb of the oculo-cardiac reflex is the trigeminal nerve

65- All the following are sequelae of water intoxication induced during TURP EXCEPT:

- A. Hyponatremia that may lead to cerebral oedema
- B. CNS symptoms (irritability, confusion)
- ☒ C. Ammonia toxicity leading to eight cranial nerve damage
- D. Pulmonary oedema
- E. Glycine and ammonia toxicity which lead to transient blindness

66- The most sensitive monitor for MI in a patient undergoing major vascular surgery is, one is TRUE:

- A. Continous monitoring of mixed venous oxygen saturation
- B. Thermodilution cardiac outputs
- ☒ C. Wall motion abnormalities of the left ventricle through 2d transesophageal echocardiography
- D. ST segment changes of EEG lead V5
- E. Changes in calculated systemic vascular resistance (SVR)



28. Consideration concerning non obstetric surgery in the parturient include all of the followings EXCEPT:
- A. Avoidance of teratogenic drugs.
  - B. Prevention of foetal hypoxia and acidosis
  - C. Avoid a premature labour
  - ☒ D. Perform the elective surgery early rather than late in pregnancy
  - E. Opioid if indicated can be used safely
29. Concerning Oxygen stores, one of the following is TRUE
- A. Are increased slightly by pre-oxygenation
  - B. Are large because oxygen is so important for cellular function
  - ☒ C. Depend in part on blood volume and haemoglobin concentration
  - D. Are large in pregnant women compared to non-pregnant women
  - E. Can be accurately assessed with a pulse oximeter
30. Low plasma cholinesterase activity, all are TRUE, EXCEPT:
- ☒ A. Is not related to the patient's blood group
  - B. Has no effect on the action of decamethonium
  - C. Occurs with organophosphorus poisoning
  - D. Prolongs the action of esmolol
  - E. Occurs in malnutrition
31. Regional anaesthesia techniques that can be used for forceps deliveries include all of the following EXCEPT:
- A. Bilateral pudendal block
  - ☒ B. Paracervical block
  - C. Subarachnoid block
  - D. Caudal block
  - E. Epidural block
32. A TRUE statement regarding drug action in parturient is
- A. Nondepolarizing muscle relaxants cross the placenta
  - ☒ B. Depolarizing muscle relaxants do not cross the placenta
  - C. Inhalational anaesthetics increase uterine muscle tone
  - D. N2O is contraindicated for caesarean section secondary to interference with vitamin B12 synthesis
  - E. Thiopental does not cross the placenta



38. **THE NERVE** most likely to be injured in lithotomy position is the
- A. Obturator nerve
  - B. Femoral nerve
  - C. Saphenous nerve
  - ☒ D. Peroneal nerve
  - E. Tibial nerve
39. The patient becomes hypotensive immediately after institution of mechanical ventilation. The appropriate first intervention is
- A. State chest radiograph
  - ☒ B. Intravenous fluid bolus
  - C. Pericardiocentesis
  - D. Hyperventilation with 100% oxygen
  - E. Thorcotomy and aortic crossclamp
40. Risk factors associated with perioperative renal failure include all of the following **EXCEPT**
- ☒ A. Hypervolemia
  - B. Diabetes mellitus
  - C. Amikacin therapy
  - D. Sepsis
  - E. Hypertension
41. An example of a central pain state is
- A. Postoperative incision pain
  - B. Gallbladder pain
  - ☒ C. Phantom limb pain
  - D. Bone fracture pain
  - E. Headache
42. Occipital neuralgia involves one of the following:
- ☒ A. The greater occipital nerve
  - B. The cervical plexus
  - C. A pain distribution confined to the occipital area
  - D. The scapular nerve
  - E. Trophic lesions of the skull

43. Signs of reflex sympathetic dystrophy may include all of the following EXCEPT
- A. Hyperesthesia
  - B. Coldness or hyperthermia
  - ☒ C. Pain of short duration
  - D. Brittle nails
  - E. Osteoporosis
44. In the PAIN THEORY proposed by Wall and Melzack, the interneurons proposed as the mediators of pain are in the
- A. Lateral horn
  - B. Corticospinal tract
  - ☒ C. Substantia gelatinosa
  - D. Cerebral cortex
  - ☒ E. Thalamus
45. If a patient undergoing thoracotomy receives INTERCOSTALS BLOCKS with
- A. Bupivacaine, his post operative period will be little different from controls
  - ☒ B. Show marked improvement in respiratory function over control
  - C. Shows little difference in vital capacity but marked pain relief
  - D. Be marked by hyperventilation
  - E. Be marked by increased incidence of atelectasis
46. The direct mechanism of action of non-steroidal anti-inflammatory (NSAID) drug is
- ☒ A. The inhibition of prostaglandin synthesis
  - B. The release of substance P
  - C. The direct action upon the  $\mu$  opioid receptor
  - D. The inhibition of substance P release
  - E. Decrease neuronal stimulation
47. Indications for lumbar sympathetic blockade include all of the following EXCEPT
- A. Acute herpes zoster
  - B. Phantom limb pain
  - C. Reflex sympathetic dystrophy
  - ☒ D. Lumbar facet syndrome
  - E. Vascular insufficiency

52. In using general anesthesia for laparoscopic cholecystectomy, which is FALSE:
- A. Inhaled nitrous-oxide will diffuse into CO<sub>2</sub> containing spaces and increase their volume on pressure
  - B. Decrease in FVC and FEV1 post operatively less than in open cholecystectomy
  - C. Small CO<sub>2</sub> emboli are common
  - ☒ D. Minute ventilation will need to be doubled
  - E. Neuromuscular blockade should be optimum during gas inflation
53. When the patient temperature is 32.0 C all the following problems may be expected EXCEPT:
- ☒ A. Metabolic alkalosis
  - B. Impairment of intrinsic clotting cascade
  - C. Cardiac dysrhythmias
  - D. Platelets dysfunction
  - E. Profound peripheral vasoconstriction
54. A COPD patient gas induction with insoluble agent can be altered because of:
- A. Decreased cardiac output
  - B. Increased perfusion
  - C. Increased PCO<sub>2</sub>
  - ☒ D. Uneven ventilation
  - E. Decreased minute volume
55. Old age is associated with all of the following , EXCEPT:
- A. A decreased minimum alveolar concentration (MAC) value for volatile agents
  - ☒ B. Resistance to non-depolarizing drugs
  - C. An increase in closing volume.
  - D. Sensitivity to morphine
  - E. Decreased autonomic function and efficiency
56. Decompression sickness, one is TRUE :
- A. Is associated with avascular necrosis of bone
  - B. Is due to an alveolar oxygen deficit
  - ☒ C. Is cured by breathing in a mixture of oxygen and helium
  - D. It occurs , no matter the way of ascending.
  - E. Is avoided if nitrogen is included in the inspired gas mixture



33. Signs of inadequate general anesthesia include all of the following EXCEPT:

- A. Eyelid movement
- ☒ B. Pupillary constriction
- C. Hyperventilation
- D. Sweating
- E. Limb movement

34. As a patient becomes more deeply anesthetized, the last sense to disappear is:

- ☒ A. Smell
- B. Vision
- C. Pain
- D. Discomfort
- ☒ E. Hearing

35. Depth of anesthesia with inhalational agents is primarily due to

- A. Rate of ventilation
- ☒ B. Potency of the anesthetic agent
- C. Age of the patient
- D. Concentration of the agent in the brain
- E. Cardiac output

36. Contraindication to discharge to home of a patient who had a hernia repair under general anesthesia include all of the following EXCEPT

- ☒ A. Nausea
- B. Inability to drink without vomiting
- C. Heart rate 50% higher than preoperative value
- D. Inability to walk due to groin pain
- E. Disorientation to person and place

37. The most common cause of anesthetic disaster

- A. Aspiration pneumonia
- B. Halothane hepatitis
- C. Circulatory instability
- D. Malignant hyperthermia
- ☒ E. Hypoxemia

57. During anaesthesia a patient with Parkinson's disease taking levodopa **SHOULD NOT** receive one of the following:
- A. Enflurane
  - B. Fentanyl
  - C. Morphine
  - ☒ D. Droperidol
  - E. Nitrous oxide
58. The sciatic nerve is formed by all the following roots **EXCEPT**:
- ☒ A. L3
  - B. L4
  - C. L5
  - D. S1
  - E. S2
59. To achieve ankle block for a fracture of the first three toes, you should block all the following **EXCEPT**:
- A. Superficial peroneal
  - B. Posterior tibial nerve
  - C. Saphenous nerve
  - D. Deep peroneal nerve
  - ☒ E. Sural nerve
60. Regarding obesity, all the following are **TRUE EXCEPT**:
- A. An increase in the incidence of airway complications
  - B. Ischaemic heart disease
  - C. Increased DO<sub>2</sub> (oxygen delivery)
  - D. Pulmonary hypertention
  - ☒ E. BMI of 29
61. The physiological response to major surgery include all the following **EXCEPT**:
- A. Hyperglycaemia
  - ☒ B. Decreased protein metabolism
  - C. Increased sympathetic nervous system activity
  - D. Antidiuretic hormone secretion is increased
  - E. Increased fibrinogen levels

72. In a 5-kg boy with Treacher-Collins syndrome who is to undergo cleft palate repair, endotracheal intubation is best accomplished with
- A. Awake nasal intubation after topical anesthesia
  - B. Sevoflurane anesthesia with spontaneous ventilation
  - C. Light isoflurane anesthesia and a muscle relaxant
  - ☒ D. Thiopental and succinylcholine sequence intravenously
  - E. Nasal intubation after administration of ketamine intramuscularly
73. Concerning transoesophageal echocardiography, all the followings are TRUE EXCEPT:
- ✓ ☒ A. It offers stable continuous monitor of cardiac function
- B. It has the ability to visualize abnormal anatomy of the heart
  - C. It shows the function of aortic and mitral valves simultaneously
  - D. It shows left ventricular outflow track
  - ☒ E. It shows right ventricular outflow track
74. Conditions that may prevent the accuracy of pulmonary artery diastolic pressure for reflecting LVEDP include:
- A. Hypoxia
  - B. Hypercapnea
  - C. Hyperthermia
  - D. Tachycardia
  - ☒ E. All are TRUE
75. In a volume-cycled ventilator, which is TRUE ?
- ☒ A. Preset volume determines the end of the inspiratory phase
  - B. Preset time determines the beginning of the expiratory phase
  - C. The volume of gas delivered to the patient is difficult to control
  - D. Pathophysiological changes in the patient can affect the volume delivery
  - E. Variations in airway pressure waveforms are difficult to accomplish

GOOD LUCK



67- Methods of renal protection before aortic cross-clamping may include all the following, EXCEPT:

- A. Intravenous mannitol 0.25-1 mg/kg
- B. Intravenous furosemide 0.5-1 mg/kg
- C. Infusion of low dose dopamine
- ☒ D. Epidural anesthesia with sympathetic blockade level to T6
- E. Keep mean arterial pressure above 50 mmHg

*Not written*

68- The standard deviation of a sample taken from a normally distributed population, all true EXCEPT:

- A. Is the square root of variance
- B. Is greater than the standard error
- C. Indicates the limits from the mean that contain 2/3 of the values
- D. Reflects the bias in selecting the original population
- E. Is lesser than the mean

69- A 71 year old man is admitted with a complaint of hoarseness and sore throat. On indirect laryngoscopy, a supraglottic mass is noted with edema of the cords. He is scheduled for direct laryngoscopy under general anesthesia. The approach to this procedure SHOULD BE

- A. Keep it simple, since it is short procedure
- B. Induction, paralysis, and laryngoscopy
- C. Induction, paralysis, intubation, and laryngoscopy
- D. Paralysis, intubation, induction, and laryngoscopy
- ☒ E. To establish an airway before paralysis or instrumentation

70- A patient with esophageal obstruction is to have a general anesthetic for esophagoscopy. He has had a barium swallow on the previous day. One of the greatest dangers of the planned procedure IS:

- A. Bleeding
- B. Hypotension
- C. Difficult intubation
- ☒ D. Aspiration
- E. Arrhythmia

71- The most common eye injury sustained under general anesthesia IS

- A. Corneal perforation
- B. Conjunctivitis
- C. Uveitis
- ☒ D. Corneal abrasion
- E. Retinal artery thrombosis

72- Patients who undergo outpatient surgery with isoflurane should not drive or operate machinery for AT LEAST

- A. 30 minutes
- B. 1 hour
- C. 4 hours
- D. 8 hours
- ☒ E. 16 hours

73- Complications of anaesthesia in sitting position include all of the following EXCEPT

*position slowly  
+ lower leg up  
at the level  
of the heart*

- A. Pneumocephalus
- B. Venous air embolus
- ☒ C. Hypertension
- D. Facial edema
- E. Sciatic nerve injury - *cranial nerve 6th + quadriplegia*

74- The nervous structures most likely involved in improper supine positioning are nerves of the :

- A. Cervical plexus
- ☒ B. Brachial plexus
- C. Lumbar plexus
- ☒ D. Sciatic nerve
- E. Autonomic system

75- A 65 kg 75 year old woman is undergoing a cataract extraction under monitored anaesthesia care (conscious sedation). You administer 20 mg of methohexital intravenously prior to the performance of retrobulbar block by surgeon. At that time the heart rate, as measured by the ECG, is the proper course of action to take next IS:

- A. Endotracheal intubation
- B. Administer atropine 0.4 mg iv
- C. Cancel the surgery pending pacemaker insertion
- ☒ D. Request that the surgeon stop manipulation
- E. Start chest compression

GOOD LUCK

**THE ARAB BOARD FOR MEDICAL SPECIALIZATIONS  
SCIENTIFIC COUNCIL OF ANAESTHESIA**

***Final exam - Paper Two  
22 September 2010  
12-2 P.M***

**NAME:** .....

**NUMBER:** .....

**CENTER:** .....



The Arab League  
Council of Arab Health Ministers  
The ARAB BOARD OF MEDICAL SPECIALIZATIONS  
*Scientific council of Anesthesia*

**INSTURCTIONS FOR THE EXAM**

1. Mark your number and write your name
2. Be sure to give all papers (questions & answers sheets) to the supervisor before you leave the exam room. Any missing paper may oblige us to cancel your examination.
3. Time allowed: **TWO HOURS.**
4. You are not allowed to leave the examination hall before 30 minutes have passed.
5. If you have an urgent need to talk to the supervisor or to leave the room for any reason, you have to raise your hand (do not ever talk) until he comes and responds to your request.
6. Try to answer all the questions, as there is no penalty for wrong answers.
7. This book contains 16/ numbered pages. Verify the number of pages. Be sure that there are no repeated pages or missing ones.

This paper consists of 75 multiple-choice questions. There is only one correct answer for each question. Select the single most appropriate answer and mark it on the answer sheet.

GOOD LUCK

11. Intraoperative "wake-up" test performed during spine surgery, one is TRUE :

- ☒ A. Determines if distraction of the vertebral column compromised neurologic function
- B. Is not necessary if somatosensory evoked potential are monitored
- C. Is the test of sensory function
- D. Determine adequacy of fluid replacement
- E. Assesses motor function in upper extremities

12. On emergence from major spinal fusion for a 15 yrs old female, the patient was unable to move her left lower extremity, the proper action WILL BE:

- A. Begin blood transfusion
- B. Observe for 24 hours
- C. Establish baseline neurologic function and observe
- ☒ D. Re-explore immediately
- E. Single dose of dexamethasone

13. A 16-year-old Down syndrome patient is admitted for dental extraction in preoperative preparation, one is TRUE :

- A. Atropine should be avoided
- B. Opioid should be avoided
- ☒ C. Neck mobility should be documented
- D. Heavy sedation is required
- E. Anticonvulsants should be withheld

14. Spinal anaesthesia for Caesarean Section is associated with all the following EXCEPT:

- A. If no preventive measures are taken, the incidence of hypotension is 60%
- B. Among the conservative measures to avoid hypotension is preloading with i.v. fluids
- C. Avoidance of aorto-caval compression helps in avoiding hypotension
- ☒ D. Full lateral position is more effective in preventing hypotension caused by aorto-caval compression
- ☒ E. Phenylephrine is recommended to treat hypotension because it is a potent pure alpha 1 agonist

15. Pulmonary artery wedge pressure can be increased in all the following EXCEPT:

- A. After myocardial infarction
- B. In mitral stenosis
- C. In aortic incompetence
- ☒ D. In pulmonary fibrosis
- ☒ E. In pulmonary stenosis ✓

FRCA

16. In the myasthenic syndrome, all the following are TRUE, EXCEPT:

- A. Sensitivity to depolarising muscle relaxants
- B. Sensitivity to non-depolarising muscle relaxants
- ☒ C. Post-tetanic potentiation
- D. Improvement with repeated muscle activity
- ☒ E. Decreased voltage on the EMG

FRCA

17. Dystrophia Myotonica is associated with all the following EXCEPT:

- A. Cataracts
- B. Frontal baldness
- C. Temporalis wasting
- D. Sternomastoid wasting
- ☒ E. Dysarthria

18. The following endobronchial tubes have no carinal hook, EXCEPT:

- ☒ A. Carlens
- B. Robertshaw
- C. McIntosh-Leatherdale
- D. Bryce-Smith
- E. Mallinckrodt

19. Concerning pain relief in children, one is TRUE

- A. They have no need for pain relief
- B. Morphine is too dangerous to give
- C. Nsaids should not be used
- D. Paracetamol is too weak to be useful
- ☒ E. Local anaesthetic blocks are useful



## Anaesthesia FINAL WRITTEN EXAM P2

20. Successful stellate ganglion block may CAUSE
- A. Contralateral miosis
  - B. Contralateral nasal congestion
  - C. Bilateral ptosis
  - D. Ipsilateral exomphalos
  - ☒ E. Horner's syndrome
21. Concerning brachial plexus blockade, all are TRUE EXCEPT
- ☒ A. The interscalene approach does not provide anaesthesia to the ulnar border of the forearm
  - ☒ B. The supraclavicular approach is reliable to produce anaesthesia to the hand
  - C. The axillary approach is least likely to cause pneumothorax
  - D. Diaphragmatic paralysis is a complication with interscalene approach
  - ☒ E. Puncture of an artery may be deliberate
22. Concerning Inguinal hernia field block, one of the following is not TRUE
- A. Blocks the ilioinguinal, iliohypogastric and genitofemoral nerves
  - ☒ B. May be employed for testicular surgery
  - C. Prilocaine 0.5% may be used
  - ☒ D. Depends on depositing local anaesthetic between internal and external oblique
  - E. Quadriceps weakness is a complication
23. Concerning Postoperative shivering, all the following statements are TRUE EXCEPT
- A. Incidence is increased in patients who received an anticholinergic premedication.
  - B. May cause hypoxia in recovery
  - C. May be arrested by a single dose of 25mg pethidine intravenously
  - ☒ D. There is increase in oxygen consumption without increasing CO<sub>2</sub> production
  - E. The incidence of shivering with extradural analgesia is reduced by the concurrent use of an opiate

24. One of the following concerning Intravenous regional anaesthesia (Bier's block) is TRUE

- A. Can safely be performed using 0.25% bupivacaine without adrenaline
- B. Provides good quality postoperative analgesia
- ☒ C. Depends on the use of a double-cuff tourniquet inflated to 50mmHg above systolic pressure
- ☒ D. The tourniquet can safely be deflated 20 minutes after injection
- E. An advantage of the technique is that it can be employed by unsupervised casualty officers

25. In a patient with sickle cell anaemia, one of the following is FALSE

- ☒ A. About 50% of their haemoglobin will be in the HbS form
- B. Exchange transfusion is appropriate prior to major vascular surgery
- ☒ C. Folate is helpful perioperatively as it may prevent an aplastic crisis
- D. The Hb-O<sub>2</sub> dissociation curve is shifted to the right aiding tissue O<sub>2</sub> unloading
- E. The use of any tourniquet is contra indicated

26. Concerning pre-operative steroids, all TRUE EXCEPT

- A. 10mg prednisolone is equivalent to 40mg hydrocortisone
- B. A patient on a maintenance dose of 10mg or more prednisolone requires additional intra-operative steroids
- C. It is estimated that adults secrete 75-100mg of cortisol in response to a major surgical procedure
- D. 10mg prednisolone is equivalent to 1.5mg dexamethasone
- ☒ E. For a patient who is on 12mg prednisolone daily, a suitable dose of intra-operative hydrocortisone for a hernia repair is 100mg

27. Properties applications to drugs that diffuse slowly across the placenta include ONE of the following:

- A. Low maternal protein binding
- B. Low molecular weight
- C. High lipid solubility
- ☒ D. High degree of ionization
- E. None of above

**Arab Board**  
**Anaesthesia Exam**  
**First Exam-Paper Two**  
**April, 2012**



1. A patient with polycythemia has all the following EXCEPT:

- A. May have a history of chronic hypoxaemia
- B. Will have abnormal platelet function if polycythemia is secondary to chronic hypoxaemia
- C. is more likely to develop venous thrombosis
- D. Has a normal oxygen saturation
- E. May have high erythropoietin levels

2. In a patient with spinal cord injury, all the following are correct EXCEPT:

- A. Pulmonary function tests are affected in lesions at T7 or above
- B. In the first 2-3 weeks following the injury hypotension and bradycardia are frequent
- C. In the first 2-3 weeks flaccid paralysis is characteristic
- D. Pre-treatment with a non-depolarizing muscle relaxant prevent hyperkalaemia caused by suxamethonium
- E. Hypothermia is more likely during anesthesia

3. Regarding anaphylactic drug reaction, one of the following is TRUE:

- A. The severity of cutaneous manifestation correlates well with cardiovascular changes
- B. When a reaction occurs after thiopentone and muscle relaxant, the thiopentone is more likely at fault
- C. Tachycardia should be treated with beta-blocker
- D. The immediate treatment of choice is intravenous hydrocortisone
- E. Reducing the speed of administration of drug attenuate the effect of possible drug reaction

4. Indicate which is FALSE, concerning post operative nausea and vomiting:

- A. Ondanesteron reduces nausea and vomiting by acting on 5-HT receptor antagonists
- B. Phenothiazine and droperidol have their effect from antidopaminergic action
- C. Metoclopramide has primarily anticholinergic action
- D. It is more common in females than males
- E. Thiopentone causes more nausea and vomiting than propofol

5) All the following are considered as physiological changes in elderly, EXCEPT:

- A. Increased closing volume.
- B. They require lower doses of drugs in general
- C. Reduced cardiac output .
- D. Increased serum creatinine
- E. Increased heat loss under general anesthesia compared to adult patient.

6. Epidural facts include all the following EXCEPT:

- A. A sensory block up to T12 should be sufficient for a caesarean section
- B. Segmental spread of local anesthetic increases with elderly
- C. Excluding caudals, the L2/L3 and L3/L4 interspaces are usually the easiest places to enter epidural
- D. The incidence of post-surgical thromboembolic is reduced with epidural
- E. Epidural is not contraindicated in patients on prolonged NSAIDs

7. Regarding hyperthyroidism, which is FALSE:

- A. Antithyroid drugs act by increasing the iodine uptake by the thyroid gland
- B. Presentation may be as an abdominal emergency
- C. Tachyarrhythmias are a common problem with thyrotoxicosis
- D. Patient treated with radioactive iodine or subtotal thyroidectomy often develop hypothyroidism
- E. Thyroid hormone levels may be low following cardiopulmonary bypass

8. physiological changes associated with hypothermia include all the following EXCEPT:

- A. Vasodilation and bradycardia in severe hypothermia
- B. Increased blood viscosity
- C. Respiratory and metabolic acidosis in severe hypothermia
- D. Hypoglycaemia
- E. Ventricular fibrillation occurring below 28 c

9. Pulmonary oedema, indicate which one is TRUE:

- A. It is always bilateral
- B. It is more likely to occur during surgery than postoperatively
- C. Diuretics are always indicated
- D. It can be a complication of respiratory obstruction
- E. Treatment always the same

10. Laryngospasm, all the following are TRUE , EXCEPT:

- A. Is more likely in young children than in adult
- B. Is more likely with isoflurane induction than in sevoflurane
- C. Incidence is reduced if patient stop smoking /24/ h prior to surgery
- D. Tends to be caused more by thiopentone than by propofol
- E. Incidence increases by upper respiratory tract infection.

11. In a patient with well controlled insulin dependent diabetes, for elective surgery, indicate which one is TRUE:

- A. Glucose free solutions should be used
- B. Blood glucose should be monitored every three hours, pre and postoperatively.
- C. Beta-blockers are contraindicated
- D. Volatile agents should not be used
- E. The full morning dose of insulin should be given on the day of surgery

12. Concerning post traumatic acute renal failure (ARF),indicate which one is TRUE:

- A. Mortality is 50%
- B. Mannitol is contraindicated in the management
- C. The oliguric phase lasts 10 days
- D. Disseminated intravascular coagulation (DIC) can occur
- E. There is an increased urinary urea level with normal creatinine level.

13. Massive blood transfusion , all the following statement are TRUE, EXCEPT

- A. Is defined as 10% of blood volume transfused within 10 minutes.
- B. Citrate toxicity is very common
- C. Causes an increase in serum potassium
- D. Causes a reduction in serum calcium
- E. Causes metabolic acidosis.

14. The appropriate management of a patient who becomes agitated and confused after the tourniquet is deflated during intravenous regional anaesthesia with lidocaine would be one of the following

- A. Suxamethonium
- B. Morphine
- C. Propofol
- D. Mannitol
- E. Fentanyl



15. Concerning fat embolism syndrome, all the following are TRUE, EXCEPT :

- A. A petechial rash can be seen.
- ☒ B. A fall in haematocrit is characteristic
- C. Mental changes may be due to hypoxia
- D. There may be a pyrexia
- E. It occurs more commonly in pelvis and long bone fractures .

16. Low molecular weight heparin, which one is TRUE :

- A. Activity is effectively measured by activated partial Thromboplastin time (aptt)
- B. Strongly binds to plasma proteins
- C. Has a shorter plasma half-life than a standard heparin
- D. Has its effect reversed by an equivalent dose of protamine
- ☒ E. Has a prolonged plasma clearance in patients with renal failure

17. Concerning interosseous injection, one is TRUE:

- ☒ A. It is the route of choice in the resuscitation of small children
- B. Swelling around the needle is not a reason for discontinuation
- C. Aspiration of marrow confirms the position
- D. The femur is the best to use.
- E. Only crystalloid can be given

18. Features of tension pneumothorax include all the following , EXCEPT:

- A. Raised jugular venous pressure (JVP)
- B. Pulsus paradoxus
- ☒ C. Tracheal deviation towards the lesion
- D. Loss of cardiac dullness to percussion
- E. Decreased breath sound by auscultation .

19. All the following are effective in attenuating the pressor response to intubation, EXCEPT

- A. Intravenous lidocaine
- B. Fentanyl.
- C. Angiotensin-converting enzyme (ACE ) inhibitors
- ☒ D. A large dose of an induction agent
- E. Beta blockers

20. One of the following increase the risk of cauda equine syndrome (CES):

- A. Old age
- B. The use of small bore needle.
- C. The lithotomy position
- D. The use of barbotage
- E. The prone position

21. Sick cell trait, all the following are TRUE , EXCEPT:

- A. Is found in patients heterozygous for HBS
- B. Causes severe anaemia
- C. Is associated with reduced P50
- D. Can be differentiated from sickle cell disease on electrophoresis
- E. Causes haemolysis

22. A poorly controlled, insulin dependent diabetic, pregnant mother will have all the following, EXCEPT:

- A. An increased risk of eclampsia
- B. Hypoglycaemic episodes in the first trimester
- C. A large baby
- D. A foetus suffering from chronic hypoxia
- E. A foetus with surfactant production proportional to the serum insulin levels

23. The transurethral resection of the prostate (TURP) Syndrome, all are TRUE, EXCEPT:

- A. Is associated with hypokalaemia
- B. Presents with convulsions
- C. Is prevented by spinal anaesthesia
- D. Is associated with hyponatraemia
- E. Requires a diuretic for the treatment

24. A 63-year-old man presents for an elective laparoscopic cholecystectomy. He is obese, has angina unpredictably and at rest, and chronic obstructive pulmonary disease (COPD). Which of the following would be his ASA classification?

- A. ASA I
- B. ASA II
- C. ASA III
- D. ASA IV
- E. ASA V

25. With the neck extended, mouth open, and tongue protruded, the patient's uvula is not visible. The airway should be classed as which of the following?
- A. Mallampati 1
  - B. Mallampati 2
  - C. Mallampati 3
  - D. Mallampati 4
  - E. Connack 2
26. Which of the following is the most significant risk factor for postoperative nausea and vomiting?
- A. Female gender
  - B. Surgery on the breast
  - C. Smoking
  - D. Nonsteroidal anti-inflammatory agents given during surgery
  - E. Age over 60 years
27. Which of the following is an important test for patients with suspected OSA prior to weight loss surgery?
- A. Complete blood count (CBC)
  - B. Electrolytes
  - C. Chest x-ray
  - D. Polysomnography
  - E. Exercise stress test
28. Morbidly obese patients have which of the following alterations in respiratory physiology?
- A. Increased FRC
  - B. Reduced peak inspiratory pressures
  - C. Increased lung volumes
  - D. Increased chest wall compliance
  - E. Alveolar collapse with ventilation/perfusion mismatch.
29. Which of the following medications may be continued prior to performing an neuraxial anesthetic?
- A. Aspirin
  - B. Warfarin
  - C. Clopidogrel
  - D. Low-molecular-weight hep treatment dose
  - E. Ethienopyridine



30. TRUE statements regarding non obstetric surgery during pregnancy include all of the following EXCEPT:
- A. Nitrous oxide is best avoided in early pregnancy
  - B. Regional anaesthesia, when appropriate, is a reasonable alternative
  - C. Aspiration prophylaxis should be accomplished with either a non particulate antacid and/or an H2-blocker combined with a gastric motility agent
  - D. Benzodiazepines are contraindicated due to the increased incidence of cleft palate
  - E. Left uterine displacement (LUD) for the prevention of aortocaval compression is not necessary in the first trimester
31. The following statements regarding pregnancy and mitral stenosis are TRUE, EXCEPT:
- A. Mitral stenosis is the most common acquired cardiac lesion presenting during pregnancy
  - B. Epidural analgesia is indicated to attenuate the increased cardiac output and tachycardia associated with the pain of labor
  - C. Ephedrine is preferred as a vasopressor
  - D. Invasive hemodynamic monitoring is indicated in cases of symptomatic mitral stenosis
  - E. Maternal expulsive efforts should be avoided during the second stage of labor
32. A 2-year-old child (weight 13 kg) is scheduled for circumcision. The most suitable dose of local anesthetic for a dorsal penile block is:
- A. Bupivacaine 0.25% 8 mL
  - B. Lidocaine 1% 8 mL
  - C. Lidocaine 1.5% with epinephrine 1:200,000 8 mL
  - D. Bupivacaine 0.25% 15 mL
  - E. Bupivacaine 0.125% 15 mL
33. What is the maximum amount of leakage current from equipment:
- A. 10 milli amps
  - B. 100 milli amps
  - C. 1 amp
  - D. 10 amp
  - E. 10 micro amps

~~34.~~ Concerning heat loss from an anesthetized patient which is TRUE

- A. Radiation is responsible for about 40%
- B. Convection into the operating room account for 50%
- C. Evaporation from wound and skin do not contribute
- D. Respiratory losses is responsible for 40%
- E. Conduction is the most important

~~35.~~ Concerning the gas laws which is TRUE ?

- A. Boyle's law refers to the relationship between temperature and pressure of a gas
- ~~B.~~ Temperature is measured on the absolute temperature scale
- C. Temperature is a constant in Charles' law
- ~~D.~~ Boyle's law states that at a constant volume pressure varies with temperature
- E. The gas laws are only TRUE for air

~~36.~~ A patient is having pain on the dorsum of the foot and the lateral aspect of the knee . What nerve root is involved?

- A. L3
- B. L4
- ~~C.~~ L5
- ~~D.~~ S1
- E. S2

~~37.~~ While performing an axillary block what nerve was likely encountered after the artery posterior wall?

- A. Ulnar
- ~~B.~~ Radial
- C. Musculocutaneous
- D. Median
- E. Intercosto brachial

~~38.~~ To make a skin graft from the external face of the thigh which nerve is to be anesthetized ?

- A. Obturator
- B. Sciatic
- ~~C.~~ Lateral femoral cutaneous
- D. Femoral
- E. genitofemoral

39. Which of the following terms is defined as a perception of an ordinary non-noxious stimulus as pain ?

- A. Hyperalgesia
- B. Allodynia
- C. Dysesthesia
- D. Hyperesthesia
- E. Hyperpathia

40. The fuel cell, all the following are TRUE , EXCEPT:

- A. Acts as an oxygen-dependent battery
- B. Is unaffected by temperature
- C. Current flow depends on the uptake of oxygen at the cathode
- D. Gives a high reading if oxygen pressure increases
- E. Has a typical response time of 30 to 40 seconds

41. Concerning the Ayre's T piece or its Jackson Rees Modification, all are correct, EXCEPT:

- A. A fresh gas flow of 2-3 times greater than the spontaneous Minute ventilation is required to ensure normocapnia
- B. It is more efficient for controlled ventilation than spontaneous ventilation
- C. In a normocapnic ventilated patient, doubling the length of the tubing from the T piece does not affect the  $p_{aO_2}$
- D. It is classified as a mapleson F system if an open bag is attached to the expiratory limb
- E. The expiratory limb must have a 55mm internal diameter to avoid excessive resistance

42. Regarding gauge pressure, all the following are TRUE, EXCEPT :

- A. When the cylinder is empty the gauge records 0 bar
- B. The absolute pressure in the empty cylinder is about 1 bar
- C. A full oxygen cylinder has a gauge pressure of 137 bar
- D. Absolute pressure equals atmospheric pressure minus gauge pressure
- E. Arterial blood pressure readings are gauge pressures



43. In a Venturi-type oxygen therapy mask, all are TRUE, EXCEPT

- A. The delivered flow should exceed 20 litres per minute
- B. Oxygen concentration depend on the orifice or the size of the constriction .
- C. Plugging the holes in the side of the mask will increase the delivered oxygen concentration
- D. Rebreathing usually does not occur
- E. Increasing the diameter of the orifice decreases the concentration of the oxygen delivered

44. The likelihood of the onset of the turbulent flow is predicted by increase of all the followings, EXCEPT :

- A. The density of the fluid
- B. The viscosity of the fluid
- C. The velocity of the fluid.
- D. The diameter of the tube.
- E. The square root of the driving pressure

45. With regard to heat, all the following are TRUE , EXCEPT :

- A. Specific heat is the heat energy required to raise the temperature of 1 kg of a given object by 1\_C
- B. Heat capacity is the amount of heat energy required to change the structure of a substance without a change in temperature
- C. Frost on a nitrous oxide cylinder can be explained by latent heat of vaporization
- D. The specific heat capacity of a gas is less than that of liquids
- E. The units of heat capacity are joules/Kg

46. With regard to humidity all the following are TRUE, EXCEPT:

- A. In hair hygrometers the hair becomes longer with increased humidity
- B. Regnault's hygrometer contains mercury
- C. High humidity reduces the risk of electrocution
- D. Relative humidity equals vapour pressure / svp at that temperature.
- E. If the temperature of a gas increases the relative humidity falls

47. Pulse oximeters, all are TRUE , EXCEPT :

- A. Rarely can cause burns to low perfused skin under the probe
- B. Are inaccurate in the presence of HbF
- C. Are inaccurate in the presence of methaemoglobin
- D. Are accurate in negro patients
- E. Have a faster response time than transcutaneous oxygen electrodes.

48. In cardioversion, indicate which is **TRUE**:

- A. It is the voltage that is important
- B. Only 10%–30% of the energy applied to the chest wall will pass through the myocardium
- C. Alternating current capacitor discharge is the preferred technique
- D. If alternating current is used it must be synchronised with the R wave
- E. The maximum energy applied should not exceed 100 J.

49. Below the inguinal ligament, the femoral vein is relative to the femoral artery

- A. Lateral
- ☒ B. Medial
- C. Anterior
- D. Posterior
- E. Deep

50. Regarding Glycopyrronium, which is **TRUE**?

- ☒ A. Is a quaternary amine
- B. Is shorter acting than atropine
- C. Causes foetal tachycardia
- D. Crosses the blood brain barrier
- E. Is antiemetic

51. Enflurane, which is **FALSE**?

- A. Is an ether
- B. SVP is 175 mmHg at 20°C
- C. Depresses the myocardium
- D. Vasodilates
- ☒ E. Is metabolised to bromide

52. All the following statements are **TRUE** concerning Nitrous Oxide **EXCEPT**:

- A. It may induce post-operative deafness
- ☒ B. It forms a reversible complex with haemoglobin
- C. It may induce teratogenicity with prolonged exposure
- D. It may induce diffusion hypoxia
- E. It may interfere with B12 metabolism

53. Etomidate, which is FALSE?

- A. Is dissolved in 35% aqueous propylene glycol
- B. Dose not lower arterial pressure
- C. Causes nausea
- D. Dissolves in erythrocytes
- ☒ E. Causes cortisol secretion

54. Mivacurium, which is TRUE?

- A. Is a steroid
- B. Is metabolised in the liver
- C. Has a duration of 30 mins
- ☒ D. Onset in 30 secs
- E. Causes slight bradycardia

55. Plasma cholinesterase deficiency may be seen in all the following EXCEPT:

- A. In malnutrition
- B. In pregnancy
- C. In inheritance of the silent gene
- ☒ D. In coronary artery disease
- E. In hepatic failure

56. Which of the following is the MOST sensitive means of detecting venous air embolism (VAE)?

- A. EEG
- B. Pulmonary artery catheter
- ☒ C. Transesophageal echocardiography
- D. Mass spectrometry
- E. Right atrial catheterization

57. The anterior and posterior spinal arteries originate from the:

- ☒ A. Common carotid and vertebral arteries, respectively
- B. Internal carotid and vertebral arteries, respectively
- C. Internal carotid and posterior cerebral arteries, respectively
- D. Vertebral and anterior cerebellar arteries, respectively
- E. Vertebral and posterior inferior cerebellar arteries, respectively



58. Which of the following structures in the antecubital fossa is the MOST medial?

- A. Brachial artery
- B. Cephalic vein
- C. Tendon of the biceps
- ☒ D. Median nerve
- E. Musculocutaneous nerve

59. Cutaneous innervation of the plantar surface of the foot is provided by the:

- ☒ A. Sural nerve
- B. Posterior tibial nerve
- C. Saphenous nerve
- D. Deep peroneal nerve
- E. Superficial peroneal nerve

60. Which of the following is the most reliable indicator of adequate reversal of neuromuscular block?

- ☒ A. Inspiratory force equal to -30 Cm H<sub>2</sub>O
- B. Sustained head lift for 5 seconds
- C. Train-of-four ratio of 0.7
- D. Twitch height at 100 % of control
- E. Vital capacity of 15 ml/Kg

61. Given the following set of data, 2, 2, 2, 6, 4, 2, the Mode is :

- ☒ A. 6
- B. 2
- C. 18
- D. 3
- E. Cannot be determined by the information given

62. In a patient with sickle cell disease, which of the following is LEAST likely to trigger sickling?

- A. Hypothermia
- B. Increased systemic vascular resistance ✓
- C. Low CVP
- D. Low mixed venous PO<sub>2</sub>
- ☒ E. Metabolic alkalosis

63. With regard to succinylcholine, ONE is TRUE:

- A. The risk of anaphylaxis is higher than with other neuromuscular blocking drugs
- B. The hyperkalaemic response after denervation burn injury peaks at 3 weeks
- C. The hyperkalaemic response does not occur if the baseline plasma potassium is normal
- D. Cardiac arrest after its administration is more common in acute renal failure patients
- E. Cardiac arrest is more common in patients given succinylcholine on the first day of artificial ventilation

64. During N<sub>2</sub>O anaesthesia, which of the following expands most rapidly?

- A. Air in the intestine
- B. Endotracheal tube cuff
- C. Pneumothorax
- D. Air bubble in the blood
- E. Air in the middle ear

65. All the following factors affect drug distribution EXCEPT:

- A. Physical and chemical characteristics of the drug
- B. Cardiac output
- C. Capillary permeability in various tissues
- D. Drug metabolism
- E. Lipid content of the tissue

66. Features of an anaphylactic reaction to thiopentone include all the following EXCEPT:

- A. Periorbital oedema
- B. Petechial rash
- C. Marked hypotension
- D. Bronchospasm
- E. A fall in circulating level of (IgE)

67. Concerning thiazide diuretics, all the following are TRUE EXCEPT:

- A. Are vasodilators
- B. Affect chloride transport in the distal tubule
- C. Can increase plasma cholesterol
- D. Are indicated for the treatment of ascitis in liver disease
- E. May cause gout

68. Preload can be reduced by all the following drugs EXCEPT:

- A. ACE inhibitors
- B. Nitrates
- C. Hydralazine
- D. Adenosine
- ☒ E. Thiazide

69. Concerning the stress response to surgery, ONE is TRUE:

- A. Occurs mainly during operation
- B. Can not be obtunded by high dose opioid
- ☒ C. Is completely eliminated by effective thoracic epidural analgesia
- D. Is beneficial for postoperative recovery
- E. Promotes postoperative catabolism

70. The MOST common cause of postoperative hepatic dysfunction is :

- A. Drug toxicity
- B. Infection
- C. Trauma
- ☒ D. Hepatic ischaemia
- ☒ E. Halothane anaesthesia

71. All the following are adverse cardiovascular system effects of perioperative pain EXCEPT:

- A. Tachycardia
- ☒ B. Decreased stroke volume
- C. Increased cardiac work
- D. Increased myocardial oxygen consumption
- E. Increased risk of DVT

72. Anaesthetic considerations in diabetic patients include all the following EXCEPT:

- A. Good control of blood glucose is important
- B. Delayed gastric emptying
- ☒ C. It increases the epidural dose required
- D. The sliding scale guided by urine glucose is not efficient
- E. It causes impaired renal function



73. All the following statements about dilatation and curettage (D&C) are TRUE, EXCEPT:

- A. It involves dilatation of the uterine cervix
- B. During general anaesthesia halothane is contraindicated
- C. Postoperative nausea and vomiting are common
- D. It can be done on day case surgery basis
- E. Shock may indicate uterine perforation by the operator

74. Concerning preoxygenation, ONE is TRUE:

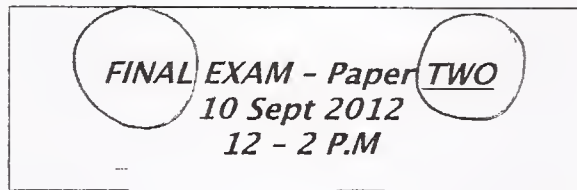
- A. Can be started in the ward prior to coming to theatre
- B. As part of rapid sequence induction occurs before induction of anaesthesia
- C. Causes a significant increase in the oxygen bound to haemoglobin in the blood
- D. Should take place through an anaesthetic circuit and a high oxygen flow rate and the mask held just off the face
- E. Allows for acceptable oxygenation during 10 minutes of apnoea

75. Blood viscosity depends on all the following factors EXCEPT ?

- A. Temperature
- B. Plasma proteins
- C. Age
- D. Haemoglobin concentration
- E. Systolic blood pressure

Good Luck

**The Arab League**  
Council of Arab Health Ministers  
**The ARAB BOARD OF MEDICAL SPECIALIZATIONS**  
*Scientific council of Anesthesia*



NAME: .....  
NUMBER: .....  
CENTER: .....

**INSTURCTIONS FOR THE EXAM**

1. Mark your number and write your name
2. Be sure to give all papers (questions & answers sheets) to the supervisor before you leave the exam room. Any missing paper may oblige us to cancel your examination.
3. Time allowed: **TWO HOURS.**
4. You are not allowed to leave the examination hall before 30 minutes have passed.
5. If you have an urgent need to talk to the supervisor or to leave the room for any reason, you have to raise your hand (do not ever talk) until he comes and responds to your request.
6. Try to answer all the questions, as there is no penalty for wrong answers.
7. This book contains /15 / numbered pages. Verify the number of pages. Be sure that there are no repeated pages or missing ones.

This paper consists of 75 multiple-choice questions. There is only one correct answer for each question. Select the single most appropriate answer and mark it on the answer sheet.

**GOOD LUCK**

1. Arterial hypoxia in patients with adult respiratory distress syndrome can be explained by all of the followings EXCEPT:
- A. Ventilation perfusion mismatch ✓
  - B. Decreased functional capacity ✓
  - C. Decreased pulmonary compliance ✓
  - @D. Pulmonary hypertension ✓
  - E. Pulmonary edema ✓
2. A sevoflurane vaporizer will deliver an accurate concentration of an unknown volatile anesthetic if the latter shares which property with sevoflurane?
- A. Molecular weight ✓
  - B. Viscosity ✓
  - @C. Vapor pressure ✓
  - D. Blood/gas partition coefficient ✓
  - E. Oil/gas partition coefficient ✓
3. If the anesthesia machine is discovered Monday morning having run with 5 L/min of oxygen all weekend long, the most reasonable course of action to take before administering the next anesthetic would be
- A. Turn machine off for 30 minutes before induction ✓
  - B. Place humidifier in line with the expiratory limb ✓
  - C. Avoid use of sevoflurane ✓
  - @D. Change the CO2 absorbent ✓
  - E. Administer 100% oxygen for the first hour of the next case ✓
4. When a ventilator pressure-relief valve stuck in the closed position that can result in
- @A. Barotrauma ✓
  - B. Hypoventilation ✓
  - C. Hypoxia ✓
  - D. Hyperventilation ✓
  - E. Low breathing circuit pressure ✓
5. A patient presents for surgery and he has a VDD pacemaker. Select the true statement regarding this pacemaker.
- A. It senses only the ventricle ✓
  - @B. It paces only the ventricle ✓
  - C. Its response to a sensed event is always inhibition ✓
  - D. Its response to a sensed event is always a triggered pulse ✓
  - E. It is not useful in a patient with AV nodal block ✓



6. **The correct location for placement of the V5 lead is**  
A. Midclavicular line third intercostal space  
B. Anterior axillary line fourth intercostal space  
C. Midclavicular line fifth intercostal space  
D. Anterior axillary line fifth intercostal space.  
@E. None of the above
7. **If the internal diameter of an intravenous catheter were doubled, flow through the catheter would be**  
A. Decreased by a factor of 2  
B. Decreased by a factor of 4  
C. Increased by a factor of 8  
@D. Increased by a factor of 16  
E. Increased by a factor of 32
8. **The device on anesthesia machines that most reliably detects delivery of hypoxic gas mixtures is the**  
A. Fail-safe valve  
@B. O2 analyzer  
C. Second-stage O2 pressure regulator  
D. Proportion-limiting control system  
E. Diameter-index safety system ✗
9. **Which of the following systems prevents attachment of gas-administering equipment to the wrong type of gas line?**  
@A. Pin-index safety system ✓  
B. Diameter-index safety system  
C. Fail-safe system  
D. Proportion-limiting control system  
E. None of the above
10. **During normal laminar airflow, resistance is dependent upon which characteristic?**  
A. Density  
@B. Viscosity ✓  
C. Molecular weight  
D. Vapor pressure  
E. Temperature

11. Which is **TRUE** about a pregnant patient with severe **Pregnancy-induced hypertension (PIH)** undergoing a general anesthetic for cesarean section?
- A. Ketamine is the induction agent of choice ✗
  - B. Magnesium does not have to be continued in the postoperative period ✗
  - C. The increase in airway edema is exaggerated compared with the normal pregnant patient ✓
  - D. An increased dose of succinylcholine is required if the patient is on magnesium ✗
  - E. 0.5 MAC halothane causes neonatal depression ✗
12. 29 years old at term presents in early labour. She is known to have critical **Mitral Stenosis**. The sound medical management decision may involve all **EXCEPT**:
- A. Insertion of PA catheter ✓
  - B.  $\beta$  - blocker for maternal tachycardia ✓
  - C. Supplemental Oxygen ✓
  - D. Epidural anesthesia ✓
  - E. Trial of labour ✗
13. Regarding **Brachial plexus block**, the following approach is associated with **high incidence of pneumothorax**:
- A. Interscalene
  - B. Axillary
  - C. Supraclavicular ✓
  - D. More with axillary than with Supraclavicular
  - E. More with Interscalene than Axillary
14. Systemic absorption of local anesthetic occurs most rapidly following which of the following techniques?
- A. Femoral block
  - B. Caudal block
  - C. Lumbar epidural block
  - D. Axillary block
  - E. Intercostal block ✓
15. The most appropriate level for a transurethral resection of the prostate under spinal anaesthesia is:
- A. T 8
  - B. T10 ✓
  - C. L2
  - D. L4
  - E. S1

16. A retrobulbar block will block all of the following nerves EXCEPT:
- A. Nasociliary nerve
  - B. Lacrimal nerve
  - C. Optic nerve
  - D. Abducent nerve
  - E. Ciliary nerves
17. When performing an interscalene block, which of the following anatomic sites is most likely to receive inadequate anesthesia?
- A. Ulnar side of the forearm
  - B. Little finger
  - C. Radial side of the forearm
  - D. Index finger
  - E. Thumb
18. A 71 year old man is admitted with a complaint of hoarseness and sore throat. On indirect laryngoscopy, a supraglottic mass is noted with edema of the cords. He is scheduled for direct laryngoscopy under general anesthesia. The approach to this procedure should be:
- A. Kept simple, since it is short procedure
  - B. Induction, paralysis, and laryngoscopy
  - C. Induction, paralysis, intubation, and laryngoscopy
  - D. Paralysis, intubation, induction, and laryngoscopy
  - E. To establish an airway before paralysis or instrumentation
19. Contraindication to discharge to home of a patient who had a hernia repair under general anesthesia in a day case setting includes all of the following EXCEPT:
- A. Nausea
  - B. Inability to drink without vomiting
  - C. Heart rate 50% higher than preoperative value
  - D. Inability to walk due to groin pain
  - E. Disorientation to person and place
20. Patients who undergo outpatient surgery with isoflurane should not drive or operate machinery for at least:
- A. 30 minutes
  - B. 1 hour
  - C. 4 hours
  - D. 8 hours
  - E. 16 hours



21. A TRUE statement regarding drug action in parturients is:
- A. Nondepolarizing muscle relaxants cross the placenta ✓
  - B. Depolarizing muscle relaxants do not cross the placenta ✓
  - C. Inhalational anesthetics increase uterine muscle tone ✓
  - D. N<sub>2</sub>O is contraindicated for caesarean section secondary to interference with vitamin B<sub>12</sub> synthesis ✗
  - E. Thiopental does not cross the placenta ✗
22. Postdural puncture headache is:
- Ⓐ More frequent with large bore needles ✓
  - B. Not lessened by the use of Whitacre needle as compared to Quincke needle
  - C. Aggravated by the supine position ✗
  - D. Noted immediately ✗
  - E. Relieved in 12 hours after epidural blood patch ✗
23. During the performance of a stellate ganglion block, the patient became apneic. This is likely due to:
- A. Vertebral artery injection of local anesthetic
  - B. Injection of local anesthetic into the periosteum
  - C. Phrenic nerve paralysis ✗
  - D. Subarachnoid injection of local anesthetic ✓
  - E. Pneumothorax ✗
24. Regional anesthesia techniques that can be used for forceps deliveries include all of the following EXCEPT:
- A. Bilateral pudendal block
  - Ⓐ B. Paracervical block ✓
  - C. Subarachnoid block
  - D. Caudal block ✓
  - E. Epidural block
25. Indications for lumbar sympathetic blockade include all of the following EXCEPT :
- A. Acute herpes zoster
  - B. Phantom limb pain
  - C. Reflex sympathetic dystrophy
  - D. Lumbar facet syndrome
  - E. Vascular insufficiency

26. The use of succinylcholine to facilitate endotracheal intubation in patients with increased ICP is associated with
- ☒ A. Increased ICP
  - B. No change in ICP
  - C. Incomplete relaxation
  - D. Conditions more satisfactory than those with the use of pancuronium
  - E. Hyperkalemia
27. Which of the following is an example of ASA Class IV patient?
- A. Compound fractured femur
  - B. Insulin-dependent diabetic with autonomic neuropathy
  - C. Unstable angina
  - D. Pheochromocytoma
  - ☒ E. GCS 3 and disseminated intravascular coagulopathy
28. A patient with hypertrophic obstructive cardiomyopathy undergoes an appendectomy. Which of the following drugs will worsen the obstruction?
- ☒ A. Ketamine
  - B. Verapamil
  - C. Phenylephrine
  - D. Beta blockers
  - E. Halothane
29. ONE of the following is TRUE about laser surgery?
- ☒ A. CO2 laser causes deep penetration
  - B. ND-YAG laser penetrates tissue to 0.2 mm
  - ☒ C. Nitrous oxide supports combustion
  - D. PVC tubes are safe in laser surgery
  - E. Rubber tubes are safe for CO2 laser
30. All of the following are predictors for the need of post operative ventilation in myasthenia gravis patients, EXCEPT:
- A. Duration of the disease > 6 years
  - B. Concomitant respiratory disease
  - C. Daily dose of pyridostigmine more than 750 mg
  - ☒ D. Newly diagnosed disease
  - E. Vital Capacity < 40 ml/kg
31. Major causes of hypocalcemia include all the followings EXCEPT:
- A. Fat embolism
  - ☒ B. Hypophosphatemia
  - C. Rhabdomyolysis
  - D. Pancreatitis
  - E. Malabsorption

32. Regarding neuroaxial opioids, ONE of the following is TRUE:
- A. Spinal opioid augments sympathetic blockade by local anaesthetic drug
  - B. Naloxone does not reverse nausea and vomiting caused by intrathecal opioids
  - C. Epidural opioids are as effective as 0.0625% bupivacaine in relieving pain
  - D. Intrathecal morphine produces up to 24 hours of analgesia
  - E. Intrathecal fentanyl produces up to 16 hours of analgesia
33. All the following are conditions where difficult intubation is anticipated in orthopaedic patients EXCEPT:
- A. Ankylosing spondylitis
  - B. Rheumatoid arthritis
  - C. Previous correction of scoliosis
  - D. Previous cervical spine fusion
  - E. Dwarfism
34. Pheochromocytoma is associated with all of the followings EXCEPT:
- A. It arises from adrenal medulla
  - B. Paroxysmal hypertension
  - C. Avoid histamine-releasing anaesthetic drugs
  - D. Hypoglycaemia
  - E. Postoperative hypotension may require noradrenaline infusion
35. All of the following are contraindications to laparoscopic surgery EXCEPT:
- A. Increased intracranial pressure
  - B. Hypovolaemia
  - C. Mitral regurgitation
  - D. Patient with peritoneo-ventricular shunt
  - E. Patient with congestive heart failure
36. All of the following are true concerning myxedema EXCEPT:
- A. Consisting Bradycardia may be observed
  - B. Non-pitting Edema observed
  - C. Treatment should be accompanied by full digitalization
  - D. Fluid and blood replacement must be guided by intense haemodynamic monitoring
  - E. Valvular diseases are frequently observed



37. **HELLP syndrome in pregnancy may be presented with all of the following EXCEPT:**
- ☒ A. Low blood pressure
  - B. Jaundice
  - C. Haemolytic anaemia
  - D. Hypoglycemia
  - E. Oliguria
38. **Pregnant patients display all of the following changes EXCEPT:**
- A. MAC of all inhalational anaesthetics progressively decrease during pregnancy
  - B. MAC returns to normal by 3rd day after delivery
  - ☒ C. Up to 50% of woman at term develop the supine hypotensive syndrome
  - D. Dose requirement of pregnant women of local anaesthetics may be reduced up to 30%
  - ☒ E. Reduction in gastric motility
39. **ONE of the following drugs is least likely to cross the placenta:**
- A. Lidocaine
  - B. Pethidine
  - C. Midazolam
  - D. Thiopentone
  - ☒ E. Vecuronium
40. **ONE of the following is most likely to decrease uterine tone:**
- ☒ A. Administration of isoflurane 1%
  - B. Administration of N<sub>2</sub>O 50%
  - C. Intrathecal injection of 3 ml of 0.5% bupivacaine
  - D. Intravenous administration of ketamine 2 mg/Kg BW
  - E. Paracervical block with 20 ml of 1% lignocaine
41. **Concerning the supine hypotension syndrome in pregnancy, all of the following are true EXCEPT:**
- ☒ A. It occurs in 11% of all pregnant patients if over 20 weeks gestation on lying supine
  - B. It occurs more commonly in multiple pregnancies
  - C. Is exacerbated by the administration of epidural anaesthesia
  - D. Is avoided by the adoption of a 5 degrees lateral tilt
  - E. Is best avoided by uterine displacement to the left rather than to the right

42. The administration of Meperidine (Pethidine) to a parturient may lead to all of the following EXCEPT:
- A. Decreased Apgar score ✓
  - B. Decreased Neonatal minute ventilation ✓
  - C. Neonatal respiratory acidosis ✓
  - Ⓐ D. Decreased uterine blood flow ✗
  - E. Highest exposure in the fetus 2 to 3 hours after administration ✓
43. Concerning fat embolism syndrome all of the following are true EXCEPT:
- A. Classically present within 72 hours following long bone or pelvic fracture ✓
  - B. Diagnosis is suggested by petechi on the chest, upper extremity, axilla and conjunctiva ✓
  - C. Serum lipase elevation presents the severity of the disease ✓
  - D. Pulmonary manifestation progresses from mild hypoxia to severe hypoxia and hypercarbia ✓
  - E. Free fatty acids are usually increased ✗
44. A 45 Kg, 80 years old woman undergoes pin fixation of the right hip in the lateral decubitus position under spinal anaesthesia. One day after the operation she cannot move her left ankle or foot actively. The most likely cause is:
- A. Compression of the sciatic nerve ✓
  - Ⓐ B. Compression of the common peroneal nerve ✗
  - C. Injury of the nerve roots at L4-L5 ✓
  - D. Stretching of the femoral nerve ✓
  - E. Stretching of the tibial nerve ✓
45. Concerning Electro Convulsive Therapy (ECT) all of the following are true EXCEPT:
- A. It is ideally performed under general anaesthesia with muscle relaxation ✓
  - B. Presence of anaesthetist is optimal for airway management ✓
  - C. A recent myocardial infarction is a contraindication ✓
  - Ⓐ D. An increased Intra Cerebral Pressure (ICP) is not a contraindication ✗
  - E. Premedication with atropine is desirable ✓

46. All of the following are true concerning autonomic hyper-reflexia, EXCEPT:
- A. Can be elicited by a distention of hollow viscus below the level of spinal cord transection
  - B. If the spinal cord transection is above T6 dermatome, the autonomic hyper-reflexia will be elicited frequently under light general anaesthesia
  - @ C. Propranolol is effective in treating hypertension associated with autonomic hyper-reflexia
  - D. It is a neurologic disorder associated with hypertension and bradycardia
  - E. Spinal anaesthesia is effective in preventing autonomic hyperreflexia
47. Concerning patients for laryngectomy, all of the following are true EXCEPT:
- A. May present a difficult intubation
  - B. Often require preoperative lung function tests and ABG
  - C. May require an initial tracheostomy under local anaesthesia
  - D. Inhalation induction is contraindicated
  - E. May require simultaneous esophagectomy
48. Early intubation following a burn is indicated in all of the following situations EXCEPT:
- A. There are full thickness burn of lips and nose
  - B. There are extensive burns to the chest
  - C. Severe cyanide poisoning is diagnosed
  - @ D. 40% of the haemoglobin is converted to carboxyhaemoglobin
  - E. A steam burn has occurred with inhalation of steam
49. All of the following are systemic effects of medications on the eye EXCEPT:
- @ A. Acetazolamide – hypokalaemic metabolic alkalosis
  - B. Adrenaline – hypertension, headache
  - C. Phenylephrine – hypertension, dysrhythmias
  - D. Scopolamine – central anticholinergic syndrome
  - E. Timolol – bradycardia, asthma, congestive heart failure
50. Peribulbar block compared to retrobulbar block has the following advantages EXCEPT:
- A. Less incidence of optic nerve damage
  - @ B. Use of smaller volume of local anaesthetic
  - C. Separate facial nerve block is not needed
  - D. No spread to the contralateral orbit
  - E. No spread to the brain-stem



51. In renal transplantation all the following should be considered EXCEPT:

- A. Preoperative optimization of the patient medical condition with dialysis is mandatory ✓
- B. The recipient's serum potassium concentration should be below 5.5 mmol/L
- C. Existing coagulopathy should be corrected
- D. CVP monitoring is very useful in ensuring adequate hydration in the recipient
- @ E. Neuroaxial anaesthesia is contraindicated in the recipient ✗

52. Predisposing factors for postoperative nausea and vomiting (PONV) in ambulatory surgery include all of the following EXCEPT:

- A. Previous history of vomiting after anaesthesia
- B. History of severe motion sickness ✓
- C. Large doses of narcotics used during anaesthesia ✓
- D. Orthopaedic procedures
- E. Gastric distention ✓

53. All the following are desirable properties of ideal sedative technique in dental surgery EXCEPT:

- A. Rapid onset and recovery ✓
- B. Predictable duration
- C. It should produce effective anxiolysis
- @ D. No effect on the gag reflex and vomiting —
- E. Has some analgesic effects ✓

54. All of the following nerves are included in the ankle block EXCEPT:

- A. Posterior tibial
- B. Sural ✓
- C. Deep and superficial peroneal
- D. Anterior tibial
- E. Saphenous ✓

55. Concerning regional anaesthesia for obese patients all of the following are true EXCEPT:

- A. Should be considered whenever possible ✓
- B. Will require 80% of the normal mg/Kg drug dose
- C. Should be avoided if difficult airway is anticipated
- D. Is associated with blocks of unpredictable height and onset
- E. May be used even if a history of sleep apnoea is obtained

56. Regarding caudal anesthesia, all of the following are true **EXCEPT**:
- ☒ A. The recommended dose is 2 ml/kg of local anesthetic ✗
  - B. The sacral hiatus forms an equilateral triangle with the two posterior iliac spine points
  - C. The sacral hiatus is covered by the sacrococcygeal membrane
  - D. The contents of the sacral cavity include all of the following; fat tissue, epidural venous plexus and filum terminale
  - E. In adults the dural sac ends at S2
57. Concerning near drowning all the following are true **EXCEPT**:
- A. Pulmonary oedema may be caused by the fluid shift of water inhalation
  - B. In cold water the victim may have dry lung
  - ☒ C. There may be hypovolaemia ✓
  - D. Cerebral hypoxia is delayed in cold water ✓
  - E. Outcome is worse in fresh water than in salty water ✓
58. Allodynia is defined as:
- A. Spontaneous pain in an area that is anesthetized
  - B. Pain initiated by primary lesion in the nervous system
  - C. An unpleasant abnormal sensation whether spontaneous or evoked
  - D. An increased response to a stimulus that is normally painful
  - ☒ E. Pain caused by a stimulus that does not normally provoke pain
59. In a patient who has persistent and prolonged thoracic pain after Herpes Zoster infection, which one of these treatments would be least effective:
- A. Oral amitriptyline
  - ☒ B. Oral Clonidine ✓
  - C. Topical Capsaicin ointment ✓
  - D. Topical Lidocaine Patch
  - E. Oral gabapentine ✓
60. An obese old woman complains of severe back pain that radiates down the left leg four days after epidural placement hip arthroplasty. The most likely diagnosis is:
- ☒ A. Epidural abscess
  - B. Epidural Hematoma
  - C. Anterior spinal artery syndrome
  - D. Arachnoiditis
  - E. Meralgia paresthetica

61. Preoperative treatment of subarachnoid hemorrhage patients, without concomitant cerebral vasospasm, might include any of the following, EXCEPT:
- A. Induced hypertension (20% above baseline)
  - B. Administration of Nimodipine
  - ☒ C. Sedation ~~X~~
  - D. Analgesic therapy
  - E. Administration of antiepileptic drugs
62. All the following are methods of spinal cord protection if a high cross clamp is applied in thoraco-abdominal aneurysm surgery EXCEPT:
- A. Hypothermia of the spinal cord
  - B. Lowering CSF pressure
  - C. Avoidance of glucose-containing solution during surgery
  - D. Somatosensory evoked potential monitoring is useful in detecting spinal cord ischaemia
  - ☒ E. Use of steroid
63. All the following are true concerning thermoregulation in neonates EXCEPT:
- A. A significant proportion of their heat loss can be accounted for by their large surface area to weight ratio
  - B. Heat loss through evaporation can be reduced by humidification inspired gases
  - C. The principal method of heat production is metabolism of brown fat
  - D. They have a thin layer of insulating subcutaneous fat
  - ☒ E. They compensate for hypothermia by shivering ~~X~~
64. All the following are true, concerning newborn compared to an adult, EXCEPT:
- A. Arterial pH is lesser than adult
  - B. O<sub>2</sub> consumption in ml/kg/min is greater than adults
  - ☒ C. Tidal volume in ml/kg is lesser than adults
  - D. Functional residual capacity in ml/kg is lesser
  - E. Carbon dioxide productivity in ml/kg/min is greater than adults
65. All the following methods are of benefit in one lung ventilation to improve oxygenation EXCEPT:
- A. Selective dependent lung PEEP of 15 Cm ( )
  - B. Intermittent inflation of the non ventilated lung
  - C. Selective non ventilated lung CPAP without tidal ventilation
  - D. Differential PEEP/CPAP (PEEP to ventilated lung and CPAP to non ventilated lung)
  - ☒ E. Use of FiO<sub>2</sub> of 1.0 with conventional ventilation



66. Anaesthetic considerations in a neonate for repair of tracheo-oesophageal fistula include all the following EXCEPT:

- A. Gastrostomy may be necessary before or during induction of anaesthesia
- B. Awake intubation could be performed
- C. Endotracheal tube should be positioned below the fistula
- D. Oesophagus is repaired primarily after the fistula is ligated
- E. Gastrostomy tube should be removed immediately after repair of the fistula ( )

67. Chemotherapeutic agents are associated with the following toxicities EXCEPT:

- A. Bleomycin and pulmonary
- ☒ B. Adriamycin and kidney and lung
- C. Most of them and thrombocytopenia
- D. Vincristine and neurologic
- E. Cyclophosphamide potentiates the effect of nondepolarizing relaxants

68. Abdominal compartment syndrome, all the followings are true EXCEPT:

- A. Fluids should be restricted X
- B. Oliguria usually present
- C. Usually diagnosed by clinical suspicion
- D. Diagnosis is confirmed by measuring bladder pressure  $>25\text{cmH}_2\text{O}$
- E. Treatment involves abdominal decompression

69. Transfusion related acute lung injury (TRALI), all are true EXCEPT:

- A. Treatment is supportive ✓
- B. Is usually noted 24- 48 hours after transfusion ✓
- C. It is a form of noncardiogenic pulmonary edema ✓
- ☒ D. Fever usually present ✓
- E. Symptoms include dyspnea and hypoxia ✓

70. Which of the following conditions is LEAST likely to be a cause of Lactic Acidosis?

- A. Severe Sepsis. ✓
- B. Cardiogenic Shock.
- C. Carbon Monoxide poisoning.
- ☒ D. Midazolam overdose.
- E. Ethanol poisoning

71. The cardiopulmonary resuscitation, which is TRUE:
- A. Dobutamine is effective as adrenaline ✗
  - B. End-tidal CO<sub>2</sub> is useful predicting effectiveness ✗
  - C. Sodium bicarbonate should be given without delay ✓
  - D. Calcium administration improves outcome ✗
  - E. Cardiac output is approximately 75% of normal during CPR ✗
72. What is the appropriate tidal volume to use in patients with ARDS?
- A. 4 - 5 ml/kg body weight.
  - B. 6 - 8 ml/kg body weight.
  - C. 9 - 10 ml/kg body weight.
  - D. 10 - 12 ml/kg body weight.
  - E. 12 - 14 ml/kg body weight.
73. The elimination half life of carbon monoxide when breathing 100% oxygen at (2 ) ATM atmospheric pressure is approximately:
- A. 150 minutes.
  - B. 120 minutes.
  - C. 90 minutes.
  - D. 60 minutes.
  - E. 30 minutes.
74. As a flow directed pulmonary artery catheter is inserted, you would expect to observe all of the following EXCEPT
- A. Right atrial pressure of 8 mmHg
  - B. Right ventricular systolic pressure of 25 mmHg
  - C. Pulmonary artery systolic pressure of 25 mmHg
  - Ⓐ D. Pulmonary artery diastolic pressure lower than right ventricular diastolic pressure ✗
  - E. Wedge pressure of 10 mmHg
75. Dantrolene, one is TRUE :
- A. Has a half-life of about 36 hours
  - Ⓐ B. Reduces levels of intracellular calcium
  - C. Causes marked cardiac depression
  - D. Should be administered daily for 3 days after an episode of malignant hyperthermia
  - E. Causes nephrotoxicity

The end

The Arab League  
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*Scientific council of Anesthesia*

**FINAL EXAM - Paper ONE**  
**26 August 2013**  
**9 - 11 A.M.**

NAME:

NUMBER:

CENTER:

**INSTURCTIONS FOR THE EXAM**

1. Mark your number and write your name
2. Be sure to give all papers (questions & answers sheets) to the supervisor before you leave the exam room. Any missing paper may oblige us to cancel your examination.
3. Time allowed: **TWO HOURS.**
4. You are not allowed to leave the examination hall before 30 minutes have passed.
5. If you have an urgent need to talk to the supervisor or to leave the room for any reason, you have to raise your hand (do not ever talk) until he comes and responds to your request.
6. Try to answer all the questions, as there is no penalty for wrong answers.
7. This book contains /12 / numbered pages. Verify the number of pages. Be sure that there are no repeated pages or missing ones.

This paper consists of 75 multiple-choice questions. There is only one correct answer for each question. Select the single most appropriate answer and mark it on the answer sheet.

GOOD LUCK



1. All of the following is seen in patients with hemorrhagic shock EXCEPT:

- A. Physiological dead-space is increased
- B. Renal blood flow is decreased
- ☒ C. Antidiuretic hormone (ADH) secretion is increased
- D. The oxygen dissociation curve is shifted to the left
- E. Oxygen delivery is decreased.

2. Increased left ventricular end-diastolic pressure:

- A. Causes increased compliance of the left ventricle
- B. Causes decreased tension in left ventricular wall
- ☒ C. Causes decreased left ventricular stroke work index
- D. Occurs in mitral stenosis
- E. Decreases coronary blood flow

3. All of the following are seen early sepsis syndrome, EXCEPT:

- A. Cardiac output is normal
- B. A decreased white cell count is a poor prognostic sign
- ☒ C. ACTH levels are low
- D. Insulin is raised
- E. PaO<sub>2</sub> is lowered

4. The elimination half life of carbon monoxide when breathing 100% oxygen at (2 ) ATM atmospheric pressure is approximately:

- A. 150 minutes.
- B. 120 minutes.
- C. 90 minutes.
- D. 60 minutes.
- ☒ E. 30 minutes.

5. With regard to the gut and multiple organ failure, one is true:

- A. High gastric intramural PH is a bad prognostic feature
- B. Administration of broad spectrum antibiotics invariably diminishes bacterial invasion through gut
- ☒ C. Splanchnic hypoperfusion is characteristic .
- D. Debutamine is more beneficial than Noradrenaline
- E. Nitric oxide therapy will increase pathogenic invasion

6. One of the following would make diagnosis of brain death unacceptable:

- A. Residual activity on an EEG
- B. Limb movement
- ☒ C. Pupils fixed but not widely dilated
- D. No pupil reaction in response to irrigation of the ipsilateral ear with ice- cold water .
- E. Normothermia

7. True statements regarding autonomic hyperreflexia include all of the following EXCEPT

- A. Autonomic hyperreflexia occurs in approximately 70% of quadriplegic patients.
- B. For full blown paroxysmal hypertension to develop, the spinal cord lesion must be above T5.
- ☒ C. Autonomic hyperreflexia is manifested by acute generalized sympathetic hyperactivity.
- D. Autonomic hyperreflexia can be triggered by manipulation of the genitourinary tract.
- E. Spinal, but not epidural blockade is effective in preventing autonomic hyperreflexia.



8. A nasogastric tube is sited in a patient ventilated in the critical care unit. Which one of the following is considered the MOST ACCURATE way of confirming correct positioning?

- A. Measurement of the aspirate using pH indicator strips
- ☒ B. Auscultation of air insufflated through the nasogastric tube (the 'whoosh' test)
- C. Testing the acidity/alkalinity of aspirate from the nasogastric tube using litmus paper
- D. Observing the appearance of the aspirate from the nasogastric tube
- ☒ E. Chest radiograph

9. The therapeutic range of magnesium in the plasma in order to prevent eclamptic seizures is between:

- ☒ A. A-2-4 mg /dl
- B. 6-8mg/dl
- C. 12-14mg/dl
- D. 14-18mg/dl
- E. 18-20mg/dl

10. All of the following stress factors are responsible for increasing energy expenditure and caloric requirements in the ICU EXCEPT:

- A. Surgery
- B. Mechanical ventilation
- C. COPD
- ☒ D. Long bone fracture
- E. Infection

11. One of the following is true about the arterio-venous O<sub>2</sub> difference:

- A. Is increased in sepsis.
- B. Is increased when the balloon of a pulmonary artery catheter is inflated.
- C. Is increased in cyanide toxicity.
- ☒ D. Is increased in low cardiac output states.
- E. Is normally 10 ml O<sub>2</sub>/dl

12. The first step in management of anaphylaxis should include all of the following EXCEPT:

- A. All pre-existing drugs, therapy and surgery should stop if possible
- B. Call to help should be sought.
- C. 100% oxygen should be administered
- D. Consideration given to securing an airway by intubation in case of angio-oedema.
- ☒ E. Adrenaline is the drug of choice given bolus 1mg IV

13. All of the following are true concerning anaphylaxis EXCEPT:

- A. Bronchospasm will occur in more than 90% patients
- B. Bronchospasm may be the only presenting feature
- C. Disseminated intravascular coagulation (DIC) may occur
- D. More than 10% of reactions involve upper airway oedema
- E. Cardiovascular collapse may be the only clinical feature

14. The following are recognised complications of massive transfusion of stored blood EXCEPT

- A. Hyperkalaemia
- B. Tetany
- C. Hypothermia
- D. Microaggregate formation and acute lung injury (TRALI)
- ☒ E. Reduced oxygen delivery due to increase 2,3 DPG levels



15. Radiographic enlargement of the pulmonary artery is seen in all the following EXCEPT

- A. Pulmonary stenosis
- B. Heart failure
- C. Mitral stenosis
- D. Increased pulmonary blood flow
- E. Increased pulmonary vascular resistance

16. Which of the following commonly occur in pulmonary embolism

- A. Left bundle branch block
- B. Dyspnoea
- C. Raised systolic blood pressure
- D. Bradycardia
- E. Cannon waves in the JVP

17. A 62 year old male, is brought to the ICU after a cardiopulmonary bypass surgery. Upon entry to the ICU he had the following parameters:

HR= 90 BP=125/75 PAOP=12 and CVP= 6.

After 30 min. the parameters became as follows:

HR=120 BP=80/30 PAOP=25 and CVP=8.

The most likely reason for this hemodynamic change is:

- A. Anaphylactic reaction
- B. Ventricular ischemia
- C. Pneumothorax
- D. Pulmonary oedema
- E. Hypovolemia

18. Catastrophic pulmonary vasoconstriction secondary to protamine reaction is treated by all of the following EXCEPT:

- A. Deepening the anesthesia
- B. Milrinone
- C. Nitroglycerine
- D. Inhaled NO
- E. Sildenafil

19. The following parameters were obtained in a male patient after a cardiac surgery:

HR= 65/min

Pulmonary vein [O<sub>2</sub>] = 0.24 mlO<sub>2</sub> /ml

Pulmonary artery [O<sub>2</sub>] = 0.16 mlO<sub>2</sub> /ml

Whole blood O<sub>2</sub> consumption = 500ml/min

The patients Cardiac Output is:

- A. 1.65 l/min
- B. 4.55 l/min
- C. 5 l/min
- D. 6.25 l/min
- E. 8 l/min



20. The commonest site of primary intimal tear in acute dissection of the aorta is:

- ☒ A. Ascending aorta
- ☐ B. Isthmus of descending aorta
- ☐ C. Aortic arch
- ☐ D. Infra renal abdominal aorta
- ☐ E. Supra renal abdominal aorta

21. Pulmonary arterial hypertension may be caused by all of the followings EXCEPT:

- ☐ A. Patent ductus arteriosus
- ☐ B. Pulmonary regurgitation
- ☐ C. Mitral stenosis
- ☒ D. Recurrent pulmonary emboli
- ☐ E. Hypoxemia.

22. Six hours after thoracotomy for esophageal resection, all of the following are true EXCEPT:

- ☐ A. Vital capacity is reduced
- ☐ B. FRC is reduced
- ☐ C. Peak expiratory flow is reduced
- ☒ D. Mixed venous saturation is reduced
- ☐ E. PaO<sub>2</sub> on air is reduced.

23. Lung compliance is increased in one of the following:

- ☐ A. The presence of intra-alveolar fluid
- ☐ B. ARDS
- ☐ C. Idiopathic pulmonary fibrosis
- ☒ D. Emphysema
- ☐ E. Fibrosing alveolitis.

24. All of the followings are true concerning post pneumonectomy pulmonary edema EXCEPT:

- ☐ A. Occurs in 2-4% after pneumonectomy
- ☐ B. Mortality occur in 50% of the cases
- ☐ C. Occurs more after right pneumonectomy
- ☒ D. Is not associated with an increase in pulmonary artery pressure
- ☐ E. It occurs in the immediate post operative period, and resolves if ever within 48hrs.

25. During one-lung anesthesia the following influence the arterial PO<sub>2</sub> EXCEPT:

- ☐ A. Hemoglobin concentration
- ☐ B. Airway pressure
- ☐ C. The degree of perfusion of the non-ventilated lung
- ☐ D. Inspired oxygen concentration
- ☒ E. Blood pressure.

26. To measure right to left shunt the followings are needed EXCEPT:

- ☐ A. End capillary PO<sub>2</sub>
- ☒ B. Mixed venous PO<sub>2</sub>
- ☐ C. Arterial PO<sub>2</sub>
- ☐ D. Cardiac output
- ☐ E. Oxygen saturation

27. Sympathectomy may be used in the treatment of all of the followings EXCEPT:

- A. Reynaud's disease
- B. Causalgia
- C. Hyperhydrosis
- ☒ D. Venous ulcers
- E. Pain of intermittent claudication

28. All of the following are true about celiac ganglion location EXCEPT:

- A. On the body of the 13th vertebra
- B. In front of the aorta
- C. On the crura of the diaphragm
- ☒ D. Behind the inferior vena cava
- E. Behind the pancreas

29. All of the following are true about Phaeochromocytomas EXCEPT:

- A. Are noradrenaline secreting tumors
- B. Can occur anywhere along the sympathetic chain
- ☒ C. Are usually benign
- D. Always unilateral
- E. Produce excessive amounts of adrenaline

30. Nerve injury in relation to anesthesia is most likely to occur in the distribution of the:

- A. Supraorbital nerve
- B. Mental nerve
- ☒ C. Ulnar nerve
- D. Median nerve
- E. Radial nerve

31. ONE of the following surgical incisions is associated with the highest risk for postoperative pulmonary complications:

- A. Vertical laparotomy
- B. Horizontal laparotomy
- C. Lateral thoracotomy
- D. Median sternotomy
- E. Cholecystectomy

32. All the following are true of Mendelson's syndrome EXCEPT:

- A. Critical volume of aspirate is 30 ml
- B. Critical pH of gastric aspirate is 2.5
- C. Onset of symptoms generally occur within 30 minutes
- ☒ D. Steroid have been shown to improve outcome
- E. pH is more critical determinant of lung injury than volume of aspirate

33. A man collapses 72 hours after a total gastrectomy. The following measurements are made: Temperature 39 C, Blood pressure 80/30 mmHg, Pulse 110 /min, CVP +2 mmHg; The diagnoses may include:

- A. Septicemia
- B. Myocardial infarction
- C. Atelectasis
- D. Tamponade
- ☒ E. Hemorrhage



34. The following may predispose to the development of respiratory distress syndrome in the neonate EXCEPT:

- A. Premature birth
- B. Maternal diabetes
- C. Antepartum hemorrhage
- D. Pre-eclampsia
- E. Congenital heart disease in the fetus

35. The following are features of Reye syndrome EXCEPT

- A. Cerebral edema
- B. Splenomegaly
- C. Hypoglycemia
- D. Respiratory alkalosis
- E. Hyperactive tendon reflexes

36. Nephroblastoma (Wilms tumor) one is false:

- A. Accounts for about 10% of solid tumors in children
- B. May be asymptomatic
- C. Is a recognized cause of hypertension in children
- D. May be associated with hyperkalaemia
- E. Mainly occurs in children under the age of 4

37. Regarding a patient with severe burns, all are true EXCEPT:

- A. Dangerous rises in serum potassium may occur
- B. A catabolic state exists for several days
- C. An arm represents 9% of the body surface area
- D. Half of the fluid replacement should be given as blood
- E. Hyperglycemia requiring insulin may occur

38. With regard to day case anesthesia:

- A. High-risk patients in physical status groups III and IV should always be excluded
- B. It is not suitable for morbidly obese patients without systemic disease
- C. It is not suitable for patients over 70 without systemic disease
- D. Ondansetron is preferable to droperidol as an antiemetic
- E. Recovery is quicker with isoflurane than with desflurane

39. Drugs with anti-emetic activity, one is true:

- A. Must cross the blood-brain barrier to be effective
- B. Include agents which are selective dopamine d1 receptor antagonists
- C. Include histamine h1 receptor agonists
- D. Are ineffective orally
- E. Include propofol

40. All of the following are associated with a higher incidence of postoperative nausea and vomiting EXCEPT:

- A. History of motion sickness
- B. Pain
- C. Obesity
- D. Smoking
- E. Female gender



41. The following statements regarding LASER are true EXCEPT:

- A. Argon lasers emit radiation which is highly absorbed by hemoglobin.
- B. The wavelength emitted by a CO2 laser is visible to the eye.
- C. Instruments used for laser surgery should be nonreflective and nonflammable.
- D. Ideally, PVC endotracheal tubes should not be used during airway surgery.
- E. If an endotracheal tube fire occurs, one should turn off the oxygen, remove the flaming endotracheal tube and extinguish the fire.

42. Which of the following statements concerning preparation of patients for adenotonsillectomy is FALSE?

- A. Risk of postoperative nausea and vomiting is higher
- B. Using laryngeal mask is contraindicated.
- C. Signs of airway obstruction should be looked for.
- D. The procedure should be postponed if signs of upper respiratory infection or tonsillitis are present.
- E. The possibility of congenital anomalies in children with obstructive sleep apnea should be considered.

43. In patients undergoing tonsillectomy, which of the following is TRUE?

- A. Patients with a normal airway assessment and a history of obstruction during sleep should undergo an awake intubation.
- B. Standard doses of hypnotics, analgesics, and anesthetics should be used for patients with a history of sleep apnea.
- C. The patient presenting for tonsillectomy should be considered to have a full stomach.
- D. Only short-acting muscle relaxants should be used, to avoid having to use reversal agents.
- E. The "tonsil position" can help prevent post-extubation laryngospasm.

44. All of the following statements are true regarding post tonsillectomy bleeding EXCEPT:

- A. The second most common period of bleeding is 5 to 10 days postoperatively.
- Ⓟ B. Rapid sequence with pentothal is the induction of choice.
- C. Two working IV lines should be established.
- D. The amount of blood loss is difficult to be estimated.
- E. Blood transfusion may be necessary.

45. Concerning the oculo-cardiac reflex, all the following are true EXCEPT:

- A. Is a trigemino-vagal reflex
- B. Commonly occurs during traction on the medial rectus muscle of the eye
- C. Rarely happens during performance of retrobulbar block
- D. Common during pressure on the eyeball
- E. Hypoxia and hypercarbia do not exacerbate the reflex

46. Major complications associated with TURP include all the following EXCEPT:

- A. Hypothermia
- B. Septicemia
- C. DIC
- Ⓟ D. Hypernatraemia
- E. Bladder perforation



47. The electrolyte and acid-base imbalance seen in end-stage renal failure includes:

- A. Metabolic alkalosis
- B. A fall in serum magnesium
- C. A rise in serum phosphate
- D. A rise in serum calcium
- ☒ E. A fall in serum potassium

48. Regional cerebral metabolism is increased by

- A. Halothane
- B. Mannitol
- C. Pain
- D. Ketamine
- E. Sodium thiopentone.

49. In the diagnosis of brainstem death:

- ☒ A. Consultation with a neurologist is needed
- B. An EEG must be flat for 24 hours
- C. Convulsions pre-empt the diagnosis
- D. Spinal reflexes may be present
- E. Blood must be sent for drug screening.

50. In L5–S1 disc prolapse with sciatica in the right leg:

- A. Loss of the knee jerk occurs on the right
- B. Loss of sensation in the medial right calf occurs
- ☒ C. Incontinence requires further surgical intervention
- D. Plaster of paris cast is the preferred early treatment
- E. Scoliosis is commonly associated.

51. Following a head injury, signs which suggest the need for urgent craniotomy include:

- A. Reduced conscious level
- B. Dilated pupil
- C. Hypotension
- D. Convulsions
- ☒ E. CSF rhinorrhoea.

52. A patient with paraplegia of recent onset with injury at T4 may have any of the followings EXCEPT:

- A. Hypotension on IPPV
- ☒ B. Adductor spasm
- C. Bradycardia
- D. Hypothermia
- E. Urinary retention.

53. To deal urgently with fractures of the mandible and/or maxilla, all should be considered EXCEPT:

- A. Other associated system injuries
- B. Suctioning of blood and debris from the oropharynx
- ☒ C. Rapid sequence induction of anaesthesia
- D. No possibility to postpone surgery
- E. Treatment of present shock before induction of anaesthesia

54. All of the following is true concerning Monitoring neuromuscular blockade EXCEPT:

- A. The stimulator should deliver a current of 60-70 mA
- B. There should be no fade with a 5 second tetanic stimulus in an unparalysed patient
- C. Fade is a feature of non depolarising blockade
- D. Head lift is a good clinical indicator of post-operative recovery of neuromuscular function
- ☒ E. Persisting suxamethonium blockade can be excluded if the train-of-four pattern shows fade

55. All of the following are true regarding epidural haematoma EXCEPT:

- A. Most common in thoracic region.
- ☒ B. Old age increases the chances of epidural haematoma.
- C. Epidural haematoma usually presents itself after 6-12 hrs of an epidural.
- D. Magnetic resonance imaging is the investigation of choice.
- E. Occurs more with patients on anticoagulants

56. Regarding local anesthetic agents, All of the following are true EXCEPT:

- A. The potency of LAs is proportional to their lipid solubility
- B. The duration of action is dependent on protein binding
- C. Agents with low pKa have a faster onset of action
- ☒ D. All local anaesthetics are vasodilators
- E. The depth of local anaesthetic block is increased by increasing the dose

57. All the following are approximate equivalent levels for spinal segment and vertebral body EXCEPT:

- A. C8 and C7
- B. T6 and T4
- C. T12 and T9
- ☒ D. L5 and T12
- E. S1 and S3.

58. All the followings could be complications of the spinal anaesthesia EXCEPT:

- A. Headache
- B. Meningitis
- ☒ C. Hallucination
- D. Hypotension
- E. Bradycardia

59. All of the following causes increase in reading of ETCO<sub>2</sub> EXCEPT:

- A. Decreased tidal volume
- B. Decreased respiratory rate
- C. CO<sub>2</sub> absorber exhausted
- ☒ D. Pulmonary embolism
- E. Fever

60. A 21-year-old patient reports tingling in her thumb during cesarean section under epidural anesthesia . To which dermatomal level would this correspond?

- A. C4
- ☒ B. C5
- C. C6
- ☒ D. C7
- E. C8



61. How much local anesthetic should be administered per spinal segment to patients between 20 and 40 years of age receiving epidural anesthesia?

- A. 0.3 to 0.5 mL
- ✓ B. 0.5 to 1.0 mL
- C. 1 to 1.5 mL
- D. 1.5 to 2 mL
- E. 2 to 2.5 mL

62. Which of the following would have the greatest effect on the level of sensory blockade after a subarachnoid injection of 5% lidocaine?

- A. Coughing during placement of the block
- B. Addition of epinephrine to the local anesthetic solution
- C. Barbotage
- D. Patient weight
- E. Patient position

63. Severe hypotension associated with high spinal anesthesia is caused primarily by:

- A. Decreased cardiac output secondary to decreased preload
- B. Decreased systemic vascular resistance
- ✓ C. Decreased cardiac output secondary to bradycardia
- D. Decreased cardiac output secondary to decreased myocardial contractility
- E. Increased shunting through arterioles

64. Regarding defibrillation, all of the following are true EXCEPT:

- A. The greater the time interval between onset of ventricular fibrillation and defibrillation, the less is the success rate
- B. 10-40 Joules should be applied to the heart if the chest is opened
- C. Paddles size is 11 x 8 cm
- D. Defibrillation is most effective when shocked during inspiration
- E. The myocardium is refractory to defibrillation in hypothermia

65. Regarding defibrillation of the heart, all are true EXCEPT:

- A. The Capacitor is an important component of the machine
- B. The amount of current flowing through the heart depends on the energy of the shock and the transthoracic impedance
- C. Electrode pad size is an important determinant of transthoracic current flow
- D. The optimum duration of the output waveform is more than 22 sec.
- E. The output waveform of most recent external defibrillators is biphasic

66. Aldrete recovery score, all of the followings are true EXCEPT:

- A. Is used to assess the patients prior to discharge from the recovery room
- B. A minimum score of 9 is required to discharge the patient
- C. The blood pressure measurement is part of the scoring
- D. All patients should have a saturation more than 96% before discharge
- E. Patients respiration, circulation, consciousness, activity and color are the evaluated items in this score



67. All of the followings are true in resuscitating a drowning victim EXCEPT:

- A. Remove the victim from water in a horizontal position
- B. Resuscitation should be considered even if the patient has been submersed in cold water for 10 minutes
- C. Ventilation should never be attempted if the victim is still in water
- D. Consider cervical spine injury if there is a history of diving
- E. Rescue breathing can be initiated whilst the victim is still in shallow water

68. In the postresuscitation care of the patient you saved from drowning, all of the followings are true EXCEPT:

- A. Prophylactic antibiotic therapy should be given
- B. There is no difference in the treatment of victims of fresh or sea water drowning
- C. Barbiturates use could improve the outcome
- D. Hypothermia may develop, and provides protection
- E. ICP monitor is indicated, but has not shown to alter the outcome

69. You arrived at the bedside 4 minutes after the cardiac arrest of a 70 kg woman. An IV line is in place and there is no pulse. The ECG confirms asystole. Two nurses are performing CPR competently. You would recommend:

- A. Delivery of a 360 J shock
- B. Sodium bicarbonate 500 mmol IV
- C. Calcium Chloride 5 ml 10% solution IV
- D. Adrenaline 1 mg IV
- E. Atropine 3 mg IV

70. During intraoperative temperature monitoring all of the following are true EXCEPT:

- A. The difference between core and skin temperature gives some indication of peripheral perfusion.
- B. Upper esophageal temperature measurement is affected by the temperature of inspired gases.
- C. It is accurate in lower esophagus.
- D. Rectal temperature is a good site to monitor the core temperature
- E. The most common way of heat loss is by conduction.

71. Using the thermal dilution technique for the measurement of cardiac output all are true EXCEPT:

- A. Erroneous results will occur in patients with an intra cardiac shunt
- B. Recirculation does not influence the measurement
- C. Arterial puncture is necessary
- D. The measurements may be repeated frequently
- E. Blood sample is unnecessary

72. Following a day case procedure under general anesthesia, which of the following is NOT a criterion for approval of discharge from the day surgery unit?

- A. Able to ambulate unassisted
- B. No pain or mild pain controllable with oral analgesia
- C. Available caregiver for 24 hours
- D. No bleeding or minimal bleeding or wound drainage
- E. Stable vital signs for one hour

73. A 55 year old patient undergoes a total hip arthroplasty under epidural anesthesia. She receives post-operative epidural analgesia. On post-op day one she develops weakness of her lower extremities, associated with sensory changes. Appropriate action at this time includes:

- A. Reassure the patient and re-evaluate the next morning
- B. Pull the catheter out
- C. Add local anesthetic
- ✓ D. Obtain magnetic resonance imaging
- E. Add fentanyl

74. Cerebral vascular resistance is reduced by all the following drugs EXCEPT

- A. Halothane
- B. Enflurane
- C. Isoflurane
- D. Desflurane
- ✓ E. Thiopentone.

75. The pressor response to intubation may be attenuated by all the following drugs EXCEPT :

- ✓ A. Calcium-channel blockers
- B. Thiopentone
- C. Fentanyl
- D. Angiotension-converting enzyme inhibitors
- E. Bbeta-blockers.

GOOD LUCK



The Arab League  
Council of Arab Health Ministers  
The ARAB BOARD OF HEALTH SPECIALIZATIONS  
*Scientific council of Anesthesia*

***FINAL EXAM - Paper TWO***  
***28 August 2013***  
***12 - 2 P.M***

NAME:

NUMBER:

CENTER:

**INSTURCTIONS FOR THE EXAM**

1. Mark your number and write your name
2. Be sure to give all papers (questions & answers sheets) to the supervisor before you leave the exam room. Any missing paper may oblige us to cancel your examination.
3. Time allowed: **TWO HOURS.**
4. You are not allowed to leave the examination hall before 30 minutes have passed.
5. If you have an urgent need to talk to the supervisor or to leave the room for any reason, you have to raise your hand (do not ever talk) until he comes and responds to your request.
6. Try to answer all the questions, as there is no penalty for wrong answers.
7. This book contains /12 / numbered pages. Verify the number of pages. Be sure that there are no repeated pages or missing ones.

This paper consists of 75 multiple-choice questions. There is only one correct answer for each question. Select the single most appropriate answer and mark it on the answer sheet.

GOOD LUCK



1. The oculocardiac reflex is prevented by all the following **EXCEPT** :

- A. Atropine
- B. Small increments of isoprenaline
- C. Retrobulbar block
- D. Deep anaesthesia
- E. Avoidance of traction on extraocular muscles.

2. Concerning analgesic drug select the **true**:

- A. Indomethacin is an addictive drug
- B. Paracetamol causes gastric irritation
- C. Unionised acetylsalicylic acid is absorbed more readily than the ionized form
- D. The analgesic properties of indomethacin are best seen when pain is associated with inflammation
- E. Phenylbutazone is the drug of choice for headache

3. Following intravenous thiopentone and suxamethonium, causes of lack of muscle relaxation include all the following **EXCEPT** :

- A. Drug interaction
- B. Subcutaneous inactivation
- C. Porphyria
- D. Malignant hyperpyrexia
- E. Myotonia congenita.

4. Increased cholinesterase activity has been associated with all the following **EXCEPT**

- A. Obesity
- B. Alcoholism
- C. Burns
- D. Thyrotoxicosis
- E. Nephrosis

5. Which of the following agents may be used safely in a patient with asthma

- A. Thiopentone
- B. Ketamine
- C. Atracurium
- D. Suxamethonium
- E. Propranolol

6. Which of the following Opioids is currently NOT approved for epidural or intrathecal use?

- A. Remifentanyl
- B. Sufentanyl
- C. Morphine
- D. Fentanyl
- E. Tramadol

7. For which of the following patients would Ketamine be **LEAST** appropriate as an induction agent?

- A. 39 year old woman with acute asthma exacerbation for emergency appendectomy
- B. 70 year old woman with cardiac tamponade for emergency thoracotomy
- C. 50 year old woman with glaucoma for elective cataract surgery
- D. 55 year old man with mild renal insufficiency and diverticulitis for sigmoid resection
- E. 7 year old child without intravenous access for elective tonsillectomy



8. Regarding the use of tourniquets in the theatre environment, the following statements are true EXCEPT:

- A. Exsanguination and tourniquet inflation is associated with immediate rise in central venous pressure, arterial blood pressure and heart rate
- B. After two hours' inflation time, a significant decrease in core temperature can be expected on deflation of the tourniquet
- C. Pre-inflation, ketamine 0.25 mg/kg intravenously can prevent the hypertensive response to tourniquets
- D. When using a double-cuff tourniquet for intravenous regional anesthesia the proximal cuff is the first to be used
- E. If the continuous tourniquet inflation time exceeds two hours, the ischaemic cell damage and lesions associated with acidosis are irreversible

9. In severe anaphylaxis under anesthesia, which of the following is MOST COMMONLY the first to be detected?

- A. Flushing of the skin
- B. Facial edema
- C. Desaturation
- D. Difficulty in ventilating
- E. Hypotension

10. Regarding positioning a patient prone under anesthesia, which one of the following statements is TRUE?

- A. In one configuration, shoulder and abdominal rolls allow adequate chest excursion
- B. The pleural pressure gradient is considerably increased when prone, compared with supine
- C. When optimally positioned, the prone patient will virtually always have an increased cardiac index
- D. One of the few advantages of partial inferior vena cava obstruction is reduced blood loss during lumbar spinal surgery
- E. Blindness is a recognized complication

11. Problems during a laparoscopic cholecystectomy include all EXCEPT:

- A. Fall in cardiac output with an intra-abdominal pressure of above 15 mmHg
- B. Acidosis and hypercarbia in patients with cardiovascular disease after CO<sub>2</sub> insufflation
- C. Stress response significantly less than with open cholecystectomy
- D. Increased incidence of regurgitation
- E. Pneumothorax

12. Rapid transfusion of cold bank blood heated to 37 deg. C causes all of the followings EXCEPT:

- A. Decrease in arterial carbon dioxide tension
- B. Decrease in citrate toxicity
- C. Increase in serum potassium
- D. Reduction in serum calcium
- E. Reduction in pulse pressure

13. In a patient with a healthy heart transplant undergoing elective non-cardiac surgery:

- A. A resting heart rate of 50 beats/min is normal
- B. The cardiovascular response to laryngoscopy is absent
- C. Atropine will cause a tachycardia
- D. Isoprenaline is the chronotrope of choice
- E. Anti-rejection therapy should be stopped preoperatively



14. Regional anesthesia techniques that can be used for forceps deliveries include all of the following EXCEPT

- A. Bilateral pudendal block
- B. Paracervical block
- C. Subarachnoid block
- ☒ D. Caudal block
- E. Epidural block

15. During emergency caesarean section under general anesthesia, the obstetrician is having difficulty in extracting the infant and requests to have uterine relaxation. Which of the following can help in providing uterine relaxation?

- ☒ A. Intravenous or sublingual glyceryltrinitrate (GTN).
- B. Intravenous lidocaine.
- C. Intravenous Oxytocin.
- D. Intravenous Cis-atracurium.
- E. Intravenous Ergotamine.

16. The most common early sign of amniotic fluid embolism (AFE) following a normal vaginal delivery is:

- A. Hypertension.
- B. Seizure.
- ☒ C. Skin rash.
- D. Abnormal bleeding.
- E. Cyanosis.

17. In a fit pregnant woman (14 week gestation) undergoes general anesthesia for emergency appendectomy, which is true?

- A. Vasoconstrictor drugs with pure alpha effect should be avoided .
- ☒ B. Higher vapor concentration is required to induce anesthesia
- C. A dramatic fall in BP could be due to aortocaval compression
- D. Non-steroidal anti-inflammatory drugs are contraindicated
- E. Neostigmine is likely to cause fetal bradycardia

18. Regarding early deceleration, one of the following statements is true:

- ☒ A. It is associated with fetal head compression.
- B. There is severe fetal hypoxia.
- C. O<sub>2</sub> is helpful in this type.
- D. It is associated with umbilical cord compression.
- E. It is associated with uteroplacental insufficiency.

19. Regarding overdose, haemodialysis would be effective in removing one of the following drugs

- A. Digoxin
- B. Pethidine
- C. Amitryptiline
- D. Propranolol
- ☒ E. Salicylate



20. The following poisons are matched to the appropriate therapy EXCEPT

- A. Carbon monoxide—hyperbaric oxygen
- B. Organophosphates—atropine and pralidoxime
- C. Beta-blocker—phentolamine
- ☒ D. Methanol—ethanol
- E. Tricyclic antidepressants—phenytoin

21. The oxyhaemoglobin dissociation curve describes the relationship of oxygen saturation to oxygen tension. All of the following are true EXCEPT:

- A. At an oxygen tension of 60 mmHg, the saturation is approximately 90%
- ☒ B. The curve is shifted to the left with a more acid pH
- C. The curve is shifted to the right with an increase in carbon dioxide tension
- D. The curve is shifted to the left with a decrease in temperature
- E. The curve is shifted to the right with increased levels of 2,3-DPG

22. Hypoxic pulmonary vasoconstriction

- A. Is not important in the intact human being
- ☒ B. Is active only at high altitude
- C. Causes more blood flow to the base of the lung
- D. Causes higher dead space/tidal volume ratio ( $V_D/V_T$ ) than in the non-hypoxic lung
- E. Diverts blood flow from hypoxic to non-hypoxic lung areas

23. The work of breathing

- A. Is increased in the anesthetised patient breathing spontaneously
- ☒ B. Is solely due to airway resistance
- C. Is solely due to elastic forces
- D. Is at its lowest at a respiratory rate of 25 breaths per minute
- E. Is increased in the patient with restrictive disease if the respiratory rate is increased

24. The term P50 in reference to the oxyhaemoglobin dissociation curve

- A. Refers to the position on the curve at which the  $PO_2$  is 50 mmHg
- ☒ B. Normally has a value of 27 mmHg
- C. Describes an enzyme system in hemoglobin
- D. Is constant
- E. Is affected only by type of hemoglobin

25. The alveolar-arterial oxygen difference ( $A-aDO_2$ )

- A. In healthy adults is about 40 to 80 mmHg
- B. Can be measured directly
- ☒ C. Increases with age because of a decrease in arterial oxygen tension
- D. Is a good screening tool for detecting dead space/vital capacity ( $V_D/V_T$ ) changes
- E. Is a good screening tool for detecting ventilation/perfusion ( $V/Q$ ) changes

26. Regarding malignant carcinoid syndrome, the following statements are true EXCEPT:

- ☒ A. Malignant carcinoid syndrome occurs in around 50% of those patients with a carcinoid tumor
- B. Fibrosis of heart valves is more commonly seen on the right side of the heart than the left
- C. Carcinoid tumors can produce insulin
- D. For a patient to have malignant carcinoid syndrome they are likely to have liver metastases
- E. Carcinoid tumors originating in the appendix are likely to be benign



27. A previously fit and well 52-year-old patient develops a regular narrow-complex tachycardia in recovery, but is otherwise stable with a blood pressure of 125/85mmHg. You apply oxygen on high flow via a facemask, perform a 12-lead ECG and start carotid sinus massage, which fails to correct the tachycardia. You give adenosine 6mg intravenously, which fails to alter the rhythm, followed by a further adenosine 12mg intravenously, again with no improvement. What would you do next?
- A. Give digoxin 500 mcg intravenously
  - B. Give amiodarone 300mg loading dose intravenously
  - C. Give verapamil 2.5mg intravenously over two minutes
  - ☒ D. Give adenosine 12mg intravenously
  - E. Perform synchronised DC cardioversion
28. The elderly show an increased response to standard drug dosage and an increased incidence of adverse drug reactions because they have all the following EXCEPT:
- A. Reduced total body water
  - B. Reduced renal and hepatic function
  - C. Reduced maximum breathing capacity
  - D. Decreased lean body mass
  - ☒ E. Increased baroreceptor sensitivity
29. One of the following statements about the interaction of anaesthetics with other drugs is correct:
- A. A patient taking a monoamine oxidase inhibitor may safely be prescribed pethidine
  - B. A patient under treatment for hypertension is liable to hypotension during general anaesthesia
  - C. Antiepileptic drugs should be discontinued for a few days before anaesthesia
  - ☒ D. Diuretic-induced hypokalaemia potentiates neuromuscular blocking drugs
  - E. Aminoglycoside antibiotics antagonise neuromuscular blocking drugs.
30. All of the following statements concerning allergic reactions to local anesthetics are true EXCEPT:
- A. True allergic reactions to local anesthetics are rare
  - B. Allergic reactions to local anesthetics usually involve a type 1 reaction
  - C. The allergic potential from esters may result from hydrolytic metabolism to para-aminobenzoic acid
  - ☒ D. Reactions are more common with amide than with ester anesthetics
  - E. Added preservatives may provoke an allergic response
31. Chemotherapeutic agents are associated with the following toxicities EXCEPT:
- A. Bleomycin: pulmonary toxicity
  - B. Adriamycin: renal and pulmonary toxicity
  - C. Most agents cause thrombocytopenia
  - D. Vincristine: neurologic toxicity
  - ☒ E. Cyclophosphamide potentiates the effect of nondepolarizing relaxants
32. In case of anaphylaxis management should include in the first step all the following EXCEPT:
- A. All pre-existing drugs, therapy and surgery should stop if possible
  - B. Call to help should be sought.
  - C. 100% oxygen should be administered
  - D. Consideration given to securing an airway by intubation in case of angio-oedema.
  - ☒ E. Adrenaline is the drug of choice given bolus 1mg IV



33. Which of the following tests are useful during acute investigation of a case of suspected anaphylaxis

- A. Serum histamine
- B. Serum N-methylhistamine
- C. Serum tryptase
- D. Serum IgA
- ☒ E. Screening test

34. Radiographic enlargement of the pulmonary artery is seen in all the following EXCEPT

- A. Pulmonary stenosis
- B. Heart failure
- C. Mitral stenosis
- D. Increased pulmonary blood flow
- ☒ E. Increased pulmonary vascular resistance

35. All The following cardiovascular changes have occurred at term pregnancy in relation to pre-pregnant values EXCEPT

- A. Cardiac output increased by 20%
- B. Stroke volume increased by 30%
- C. Decreased SVR
- D. Increased heart rate
- ☒ E. Decreased mean arterial blood pressure

36. During hip replacement surgery, cardiopulmonary changes associated with the application of acrylic bone cement include all following EXCEPT :

- A. Hypotension secondary to cement monomer absorption
- B. Hypoxemia secondary to air embolization
- C. Hypoxemia secondary to fat embolization
- ☒ D. Decreased pulmonary artery pressure
- E. Decreased end-tidal carbon dioxide

37. Aldosterone release is stimulated by all the following EXCEPT

- ☒ A. Hypokalemia
- B. ACTH release
- C. Hypovolemia
- D. Hypotension
- E. Congestive heart failure

38. About TURP syndrome which is true :

- A. Is associated with hypokalaemia
- ☒ B. May present with convulsions
- C. Is prevented by spinal anaesthesia
- D. Is caused by blood loss
- E. Treatment with diuretics is contraindicated



39. A 31 year old male with known haemophilia A presents with a fracture of his left tibia. As part of the preoperative preparation of this patient, which one of the following should be administered intravenously?
- A. FFP
  - B. Cryoprecipitate
  - C. Recombinant factor VIII concentrate
  - D. Recombinant factor IX concentrate
  - E. Desmopressin
40. An 82 year old female arrives to the OR for open reduction of a left intratrochanteric fracture. Medical history includes hypertension, aortic stenosis and dementia. The most appropriate anesthetic technique for this patient is:
- A. Opioid-based general anesthesia
  - B. Spinal anesthesia
  - C. Volatile-agent based general anesthesia
  - D. Epidural anesthesia
  - E. Lumbar block
41. Regional anesthesia for a total knee replacement is advantageous because of all the followings EXCEPT:
- A. It decreases postoperative nausea and emesis by reducing opioid required for pain relief.
  - B. It decreases total surgical blood loss.
  - C. It is better for post operative pain control
  - D. Outcome is the same in regional of general anesthesia
  - E. Oxygenation is better with regional anesthesia than with general anesthesia
42. Expected changes in a patient with pheochromocytoma include one of the following:
- A. A decreased haematocrit
  - B. An increased total blood volume
  - C. A decreased serum sodium concentration
  - D. An abnormal glucose tolerance test
  - E. A reduced metabolic rate
43. Afterload reduction is beneficial during anesthesia for noncardiac surgery in patients with each of the following conditions EXCEPT:
- A. Aortic insufficiency
  - B. Mitral regurgitation
  - C. Tetralogy of Fallot
  - D. Congestive heart failure
  - E. Patent ductus arteriosus
44. As part of a preoperative evaluation, a patient has a thallium scan showing a "cold spot" over the left ventricle that occurs with moderate exercise and disappears at rest. This most likely indicates:
- A. Moderate-sized aneurysm of the left ventricle
  - B. Acute myocardial ischaemia
  - C. Recent myocardial infarction
  - D. Old myocardial infarction
  - E. Prinzmetal's variant angina



45. Compared with adults, caudal anaesthesia in children is associated with:

- ☒ A. Higher risk for subarachnoid puncture
- B. More severe hypotension
- C. More rapid onset of sensory block
- D. Smaller volume of anaesthetic per kilogram of body weight
- E. Toxic effects at lower serum levels of bupivacaine

46. Following a vaginal hysterectomy in the lithotomy position under general anesthesia, a patient has numbness of the lateral aspect of the left calf and medial half of the dorsum of the left foot. On physical examination she has foot-drop and the toes cannot be extended. Which nerve is most likely to be involved?

- ☒ A. Common peroneal nerve
- B. Deep peroneal nerve
- C. Posterior tibial nerve
- D. Saphenous nerve
- E. Sciatic nerve

47. During the first stage of labour, the pain of uterine contractions and cervical dilatation is transmitted via the spinal cord segments:

- A. T6 to L1
- B. T6 to S5
- ☒ C. T10 to L1
- ☒ D. T10 to S1
- E. T10 to S5

48. Which of the following is the most appropriate drug to treat hypotension in patients with asymmetric septal hypertrophy (HOCM)?

- ☒ A. Amrinone
- B. Calcium chloride
- C. Dopamine
- D. Ephedrine
- E. Phenylephrine

49. A 38-year-old woman with hyperthyroidism is undergoing open reduction and internal fixation of a fractured humerus with isoflurane anesthesia. Intraoperatively her heart rate increases to 120 bpm with occasional premature ventricular contractions. The most appropriate therapy at this time is to:

- A. Discontinue isoflurane
- B. Administer edrophonium
- C. Administer esmolol
- D. Administer lidocaine
- ☒ E. Administer propylthiouracil

50. In patients with pregnancy-induced hypertension, magnesium sulfate is most likely to:

- ☒ A. Decrease maternal heart rate
- B. Decrease sensitivity to relaxants
- C. Decrease succinylcholine-induced fasciculations
- D. Prevent hypokalaemia
- E. Produce foetal bradycardia



51. Compared with epidural morphine, intrathecal morphine produces:

- A. Better relief of visceral pain
- B. Greater loss of analgesia after administration of naloxone
- C. Less pruritus
- D. Less urinary retention
- ☒ E. More respiratory depression

52. A 19-year-old woman receives a spinal anaesthetic for a repeat caesarean delivery. Two days later she is afebrile but has severe occipital pain that is aggravated by sitting or standing and relieved by lying flat. Associated findings would likely include:

- A. Bradycardia
- B. Difficulty swallowing
- ☒ C. Diplopia
- D. Facial pain
- E. Horner's syndrome

53. All the following are true, concerning congenital diaphragmatic hernia, EXCEPT:

- A. The degree of hypoplastic lung tissue is an important indicator for prognosis.
- ☒ B. Awake intubation is a good choice.
- C. Positive pressure ventilation is a good choice.
- D. Pneumothorax in the contralateral side is a frequent complication.
- E. The presenting symptoms include respiratory distress, cyanosis, and scaphoid abdomen.

54. All of the following regarding Allergic reactions are correct EXCEPT:

- ☒ A. A single allergen will cause a single type of Hypersensitivity reaction.
- B. Anaphylaxis is an example of type I hypersensitivity reaction.
- C. Complement activation takes place in type I & II hypersensitivity reactions.
- D. Chronic hypersensitivity pneumonitis is an example of type IV hypersensitivity reaction.
- E. Allergic reactions due to anesthetic drugs are mostly anaphylactoid

55. Which of the following is CORRECT regarding Carotid endarterectomy surgery?

- A. It is usually associated with significant blood loss and fluid shifts.
- B. The possibility of bradycardia is abolished by infiltration of the carotid sinus with lidocaine.
- ☒ C. If hoarseness and tongue deviation occur postoperative, they usually take long time to disappear.
- D. Regional anesthesia provides better airway control conditions than general anesthesia for this type of surgery.
- E. The outcome after either regional or general anesthesia appears similar.

56. All the following statements are true concerning administration of N<sub>2</sub>O for maintenance of anesthesia in ear surgery EXCEPT :

- A. It can result in an increase in middle ear pressure
- ☒ B. Under normal circumstances it is easily vented through the Eustachian tube
- C. It may cause tympanic membrane rupture
- D. It should be discontinued 5 minutes before placement of the graft in tympanoplasty
- E. It is better to avoid using N<sub>2</sub>O in ear surgery

57. All the followings occur in bone cement implantation syndrome EXCEPT :

- A. Hypotention
- B. Hypoxia
- ☒ C. Pulmonary hypertension
- D. Arrhythmias
- E. Hypercapnia



58. Regarding Intraoperative hypothermia , all of the following are true EXCEPT:

- A. It can be prevented by providing a local warm environment for the patient by the use of forced air-warming devices .
- B. It can decrease blood viscosity.
- C. Severe shivering can increase oxygen consumption by more than 200%.
- D. Ventricular fibrillation can happen at 28 deg. C.
- E. Hypothermic patients will have more tendency to bleed than normo-thermic patients

59. All of the following medications were found to prolong the duration of caudal blocks in children when added to bupivacaine EXCEPT:

- A. Neostigmine
- B. Clonidine
- C. Glycopyrolate .
- D. Dexmedetomidine
- E. Ketamine.

60. The use of the peripheral nerve stimulator is based on:

- A. Coulomb's law
- B. Newton's law
- C. Poisseulle's law
- D. Charles' law
- E. Boyle's Law

61. One of the following patients is fit to be operated as outpatients surgery:

- A. Patients having upper respiratory tract infection with fever
- B. Premature infants of 34 weeks postconceptual age
- C. Obese patients with no comorbidity
- D. Patients with uncontrolled diabetes
- E. Patients with pulsus bigeminy

62. The followings are true for Electroconvulsive Therapy (ECT) EXCEPT:

- A. Sedative premedication is favorable before induction of anesthesia
- B. Uncontrolled hypertension is a contraindication
- C. ECG changes are expected
- D. High intracranial pressure (ICP) is an absolute contraindication for the procedure
- E. A mouth gag should be placed to protect the gums and lips from biting

63. A 3 year old child undergoing CT scan for the diagnosis of an intracranial tumor. The anesthetist planned to give Chloral Hydrate. All of the followings are true about Chloral hydrate EXCEPT:

- A. The oral dose is 30-50 mg/kg
- B. The rectal dose is 30-50 mg/kg
- C. The drug should be given 30-60 min before the procedure
- D. In sedative dose, no respiratory depression is caused by the drug
- E. There is about 50% failure rates to prevent movement during the procedure

64. Of the following possible complications of electro-convulsive therapy (ECT) the most common is:

- A. Dental damage.
- B. Aspiration pneumonitis.
- C. Bronchospasm.
- D. Laryngospasm.
- E. Hypertension

65. Concerning chronic pain which one is false:

- A. Allodynia is pain from a stimulus that is normally painful
- B. Hyperalgesia is increased pain from a normally painful stimulus.
- C. Hyperaesthesia means increased sensitivity to a sensory stimulus
- D. Dysaesthesia is any abnormal unpleasant sensation
- E. Hyperaesthesia include allodynia and hyperalgesia

66. Concerning nerve conduction one is false:

- A. A-delta fibres are the slowest as they are unmyelinated
- B. A-beta fibres exhibit saltatory conduction
- C. C- fibres are unmyelinated
- D. A-alpha fibres conduct at 70-120 m/s
- E. A-gamma fibres are motor to muscle spindles.

67. All the following are complications of interscalene block EXCEPT

- A. Vertebral artery injection
- B. Hoarseness
- C. Pneumothorax
- D. Total spinal anaesthesia
- E. Horner's syndrome

68. Regarding post-herpetic neuralgia, which of the following statement is FALSE?

- A. It follows acute herpes zoster infection in most instances.
- B. NSAID's are very effective in relieving pain.
- C. Amitryptiline is a first line drug.
- D. It is hard to treat once established.
- E. Gabapentin is a good choice

69. Which of the following brachial plexus neural blocks would MOST likely require supplemental anaesthesia for medial wrist surgery?

- A. Interscalene block
- B. Infraclavicular block
- C. Axillary block
- D. Supraclavicular block
- E. Humeral block



70. A previously fit 5-year-old girl is distressed and in severe pain in the recovery room following emergency appendicectomy. She is awake and cardiovascularly stable.

Intraoperatively, she received fentanyl 2 mcg/kg iv, paracetamol 15 mg/kg iv and diclofenac 1mg/kg. What would be the most appropriate analgesia option for her now?

- A. Administer Entonox until the child calms down
- B. Codeine phosphate 1 mg/kg orally
- C. Codeine phosphate 1 mg/kg intramuscularly
- D. An intravenous morphine infusion at 10 mcg/kg/hour
- E. Morphine 0.1 mg/kg intravenous bolus

71. The most common complication of thoracic paravertebral nerve block is:

- A. Hypotension
- B. Subarachnoid injection
- C. Epidural injection
- D. Intravascular injection
- E. Pneumothorax

72. About burns fluid replacement, choose the best single answer

- A. Parkland formula involve only 0.9% saline for the first 24 hours
  - B. The Brook formula involve only colloid for the first 24 hours
  - C. Fluid management in burns is based on these formula and don't need clinical assessment
  - D. These formula are a guide only
  - E. A 75kg male adult with 40% BSA burns using the Parkland formula should receive 6 L of crystalloid for the first 24 hours
- 4 x 75 x 40 = 12000 ml*

73. In burn, early intubation is required to treat all the following causes of respiratory dysfunction EXCEPT:

- A. CO poisoning
- B. Upper airway edema
- C. Subglottic thermal and chemical burns
- D. Chest wall restriction
- E. Face and neck contractures

74. Concerning anesthesia for ENT surgery, which of the following statements is the most correct

- A. For microlaryngoscopy an MLT tube must be used all the time
- B. For endoscopic sinus surgery, the eyes must be taped and padded
- C. Carbon dioxide lasers have the capacity to ignite endotracheal tube
- D. In myringoplasty using an overlay graft, nitrous oxide is beneficial
- E. In parotidectomy, neuromuscular blockade is recommended

75. Cerebral blood flow is increased by all of the following EXCEPT:

- A. Hypercapnia and hypoxia
- B. Volatile anesthetic agents
- C. Ketamine
- D. Hyperthermia
- E. Critically high ICP

GOOD LUCK

**THE ARB BORD OF HEALTH SPECIALIZATIONS  
SCIENTIFIC COUNCIL OF ANAETHESIA**

**FIRST EXAM – PAPER ONE  
16 SEPTEMBER 2014  
9 – 11 A.M**

NAME:

NUMBER:

CENTER:

1. All of the following factors decrease gastric emptying, EXCEPT:

- A. Acidity in the duodenum
- B. High-protein meal
- C. Alcohol ingestion
- D. Vagal stimulation
- E. Opioids

UK / 2. Regarding ingested lipids, all the followings are true, EXCEPT:

- A. Is important in prostaglandin synthesis
- B. Increases in the faeces with a decrease in bile secretion
- C. Is absorbed via the intestinal blood capillaries
- D. Is mainly in the form of triglycerides
- E. Can be used as a source of ATP production

UK / 3. Carbonic anhydrase is found at high concentration in all of the following, EXCEPT:

- A. Cardiac muscle cells
- B. Red blood cells
- C. Renal tubular cells
- D. Gastric parietal cells
- E. All mentioned above

/ 4. Regarding buffering system in acid-base balance, all the following are true EXCEPT :

- A. 75% of buffering occurs intracellularly by protein
- B. Phosphate buffering is important in plasma
- C. Bicarbonate buffering occurs mostly in the plasma
- D. Ammonia is a buffer in the renal tubule
- E. Reduced haemoglobin combines with hydrogen ions

/ 5. Regarding basal metabolic rate, all the following are true EXCEPT:

- A. Men and women have equal basal metabolic rates .
- B. May be measured using spirometry .
- C. Is higher in children than in adults
- D. Is subject to diurnal variation
- E. Is related to body surface area

6. Concerning juxtaglomerular apparatus, ONE is TRUE:

- A. Regulates the volume of urine produced
- B. Regulates sodium reabsorption
- C. Secretes aldosterone
- D. Secretes rennin
- E. Maintains acid-base balance



7. A decrease in cortisol secretion would lead to ONE of the following :
- A. Increased storage of glycogen in the liver
  - B. Decreased ACTH secretion
  - C. Decreased adrenomedullary synthesis of adrenaline
  - D. Increased plasma glucose content
  - E. Increased hepatic protein synthesis
8. An increase in plasma parathyroid hormone (PTH) level would lead to an increase in ONE of the following :
- A. The number of active osteoblasts
  - B. Plasma inorganic phosphate concentration
  - ? – C. Renal synthesis of calcitriol
  - D. Collagen synthesis
  - E. Renal proximal tubular reabsorption of  $\text{Ca}^{2+}$
9. Prolonged respiratory alkalosis, can be associated with all of the following , **EXCEPT**:
- A. Increased ionised calcium in the blood
  - B. Increased bicarbonate concentration in the urine
  - C. Decreases pH inside the red blood cells
  - D. Shifts the oxygen dissociation curve to the left
  - E. Hypokalaemia
10. Regarding the blood-brain barrier, which one is false:
- A. Results in certain molecules in the blood taking longer to equilibrate with tissue fluid in the brain than with tissue fluid elsewhere
  - B. Permits  $\text{CO}_2$  to pass freely
  - C. Is more permeable to fat-soluble than water-soluble substances
  - D. Is more permeable in neonates than in adults
  - E. Is readily crossed by dopamine
11. In normal cerebrospinal fluid, one is true :
- A. Chloride concentration is higher than in blood
  - B. Glucose concentration is the same as in plasma
  - C.  $\text{PCO}_2$  is lower than in mixed venous blood
  - D. pH is the same as in arterial blood
  - E. Bicarbonate concentration is the same as in arterial blood

**12. If the body temperature falls during a long operation , all the following are true, EXCEPT:**

- A. Oxygen and carbon dioxide are more soluble in blood
- B. Blood viscosity is increased
- C. There is a shift of the oxygen dissociation curve to the left
- D. The effect of non-depolarising drugs is reduced
- E. Acidosis is a common problem

✓ **13. Regarding the passage of ions across a cell membrane, all are true , EXCEPT**

- A. Takes place through temporary open channels
- B. Requires the expenditure of energy
- C. Can occur through ligand-gated channels
- D. Can occur through voltage-gated channels
- ? - E. Involves thyroxine release

**14. The synaptic channels on the end-plate of the skeletal muscle are:**

- A. Highly selective for Na<sup>+</sup>
- B. Opened when the cell membrane depolarizes
- ✓ C. Activated by acetylcholine
- D. Inhibited by atropine
- E. Responsible for the relative refractory period

**15. Which of the following statements concerning the sympathetic nervous system (SNS) is TRUE?**

- A. The first four to five thoracic spinal segments generate fibers that converge to form three special paired ganglia.
- B. The middle cervical ganglion is also known as the stellate ganglion.
- C. The stellate ganglion provides sympathetic innervations only to the head and neck.
- D. The response of the SNS is very discrete.
- E. One preganglionic fiber influences one postganglionic neuron.

✓ **16. Which of the following statements regarding the parasympathetic nervous system (PNS) is TRUE?**

- A. The sacral fibers originate from the white matter of the second, third, and fourth sacral nerves.
- B. Preganglionic fibers are myelinated fibers analogous to those in the sympathetic and terminate in ganglia next to the spinal cord.
- C. Preganglionic fibers are found in the following cranial nerves: optic, facial, and glossopharyngeal.
- ✓ D. Postganglionic neurons are located in or near the organ to be innervated.
- E. The vagus nerve has the last innervations of all parasympathetic nerves.

**17. All the following statements regarding receptors are true EXCEPT:**

- A. Acetylcholine is the neurotransmitter at three different classes of receptors.
- B. Cholinergic receptors are located in striated voluntary muscles.
- C. The two subdivisions of cholinergic receptors are muscarinic and nicotinic.
- ✓ D. Muscarinic stimulation causes, bronchodilation, and miosis.
- E. Nicotinic receptors are located in the sympathetic nervous system.

**18. Which of the following statements regarding dopamine receptors is TRUE?**

- ✓ A. Dopamine -1 receptors are located postsynaptically.
- B. Dopamine -2 receptors are located only presynaptically.
- C. Dopamine receptors have been located in the myocardium and are responsible for increased inotropism.
- D. Dopamine receptors inhibit the release of prolactin in the hypothalamus.
- E. Dopamine -1 receptors are located on vascular smooth muscle of the kidneys and mesentery, and may produce vasoconstriction.

**19. The A-beta fiber is:**

- A. An efferent to muscle spindles ✓
- ✓ B. A large nerve fiber associated with transmission of deep touch and proprioception
- C. An afferent sensory nerve conducting pain
- D. A preganglionic sympathetic ✓
- E. Not myelinated

**20. Preganglionic autonomic nerve fibres are:**

- A. Alpha fibers
- B. Beta fibers
- C. Gamma fibers
- ✓ D. B fibers
- E. C fibers

**21. All of the following cranial nerves contain parasympathetic efferent fibers EXCEPT:**

- A. Oculomotor nerve ( III )
- ✓ B. Trigeminal nerve ( V )
- C. Facial nerve ( VII )
- D. Glossopharyngeal nerve ( IX )
- E. Vagus nerve ( X )



**22. The circulation to the kidneys:**

- ✓ A. Is autoregulated over a mean arterial pressure range of 80 to 160 mmHg
- B. Is not regulated by neural factors
- C. Is innervated by sympathetic nerves originating T2-T3
- D. Is not affected by epinephrine
- E. Is constricted by prostaglandin E2

**23. The countercurrent mechanism of the kidney involves:**

- A. The nephron and the glomerulus
- B. The arteries and veins
- C. A collecting duct and a distal tubule
- ✓ D. The loops of Henle and the vasa recta
- E. The proximal tubule and the distal tubule

**24. Metabolic acidosis with a normal anion gap may be caused by:**

- A. Aspirin toxicity
- B. Diabetic ketoacidosis
- C. Chronic diarrhoea
- D. Uremia
- E. Lactic acidosis

**25. Reabsorption of filtered water and sodium is enhanced by changes mediated by the hormonal factors, which include all of the following EXCEPT:**

- ✓ A. Antidiuretic hormone (ADH)
- ✓ B. Atrial natriuretic peptide (ANP)
- C. Aldosterone
- D. Cortisol
- E. Brain natriuretic peptide

**26. Chronic gastric secretion losses tend to cause:**

- ✓ A. Hypochloremic alkalosis
- B. Hyperchloremic alkalosis
- C. Hypochloremic acidosis
- D. Hyperchloremic acidosis
- E. Alkalosis with anormal chloride value

**27. Chronic diarrhea tends to produce:**

- A. Hypochloremic acidosis
- B. Hypochloremic alkalosis
- ✓ C. Hyperchloremic acidosis
- D. Hyperchloremic alkalosis
- E. Alkalosis with a normal chloride value

28. What is the typical daily fluid requirement for a 30- kg child?

- A. 300 ml
- B. 3,000 ml
- C. 1,100 ml
- D. 1,400 ml
- ✓ E. 1,700 ml

29. Symptomatic hyperkalemia may be treated with all the following EXCEPT:

- A. Glucose
- B. Sodium bicarbonate
- ✓ C. Spironolactone
- D. Regular insulin
- E. B2 agonists

30. Cardiac output increases with all of the followings, EXCEPT:

- A. An increase in stroke volume.
- B. An increase in  $dp/dt$ .
- C. An increase in LVEDV.
- D. An increase in pulmonary venous pressure.
- ✓ E. An increase in aortic pressure.

UK 31. One of the following can be found in normal adult venous blood:

- ✓ A. 3% COHb.
- B. 5% MetHb
- C. 85% OxyHb
- D. 2% free Hb
- E. 2% HbA2

32. All of the following are true in Cardiac ventricular muscle, EXCEPT:

- ✓ A. Repolarization time varies with cardiac rate.
- ✓ B. Depolarization is followed by a plateau potential lasting about 200 ms.
- C. Prepotential decay between action potentials is due to declining  $K^+$  efflux.
- D. Cannot be tetanized.
- E. Action potential amplitude is dependent on extracellular Na concentration.

33. Concerning white blood cells, which one is TRUE:

- A. The average half-life in the circulation of neutrophils is 6 hours
- B. Lymphocytes are produced in the liver
- C. Basophils contain heparin and histamine and are phagocytic
- D. Neutrophils attack parasites
- E. T lymphocytes originate in the thyroid.

**34. Acute antagonism of beta adrenergic receptors causes one of the following:**

- A. Hyperglycemia
- B. Peripheral vasodilatation
- C. Suppression of uterine contractility
- D. Pupillary dilatation
- ✓ E. A reduction in cardiac output

**35. All the following are true regarding natriuretic factor EXCEPT:**

- ✓ A. It decreases glomerular filtration rate
- B. It is secreted by the cardiac atria
- C. It causes renal artery vasodilatation
- D. Its plasma concentration is directly related to right and left atrial pressure
- E. Hypothermia inhibits its release

**36. All of the following are involved in rapid acting mechanism for regulation of blood pressure, EXCEPT:**

- ✓ A. Chemoreceptors
- B. Baroreceptors
- C. Renin-Angiotensin system
- D. Atria
- E. CNS ischaemia

**UK 37. In a healthy adult human heart, all are true EXCEPT:**

- A. Left ventricular end-systolic volume is approximately 30 ml
- B. First heart sound coincides with the onset of ventricular systole
- C. Stroke volume is approximately 70 ml
- ✓ D. Left ventricular end-diastolic pressure is about 50 mmHg
- E. Second heart sound is caused by closure of the aortic and pulmonary valves

**38. An increase in the 2,3-DPG concentration in red blood cells occurs in all of the following , EXCEPT:**

- A. Anaemia
- B. Acclimatisation to altitude
- ✓ C. Stored blood
- D. Cyanotic heart disease
- E. This increase will shift the oxyhemoglobin dissociation curve to the right.

**UK 39. In normal cardiac cycle , all the following are true , EXCEPT:**

- A. Both ventricles contract synchronously.
- B. The right atrium contracts before the left atrium.
- C. The interventricular septum depolarizes from left to right.
- ✓ D. The normal PR interval is 0.22 sec.
- E. The refractory period of cardiac muscle is 0.5 sec.



**40. Which is false regarding the coagulation of blood?**

- A. Initially involves the aggregation of platelets at the point of vessel damage.
- B. Involves the production of thrombin from factor II
- C. Occurs under either intrinsic or extrinsic cascade.
- D. Is impaired in hemophilia B as a result of factor IX deficiency.
- E. Antithrombin III is potentiated by Heparin. ✓

**41. During isovolumetric contraction of the ventricles, one is true:**

- A. Aortic blood flow is reversed
- B. Coronary blood flow increases
- C. The pulmonary valve is not yet shut
- ? - D. Aortic pressure is falling
- E. When both ventricles reach the same pressure their respective outflow valves open

**42. All the following regarding intra-pleural pressure are true, EXCEPT:**

- A. Indirectly can be measured with an esophageal balloon
- B. Is related to diffusion of O<sub>2</sub> into the inter-pleural space?
- C. Becomes increasingly negative with increasing lung volumes during inspiration
- D. It is negative to atmospheric pressure at FRC?
- E. Is higher in the independent parts of the lung?

**43. Restrictive lung disease is characterized by all of the following, EXCEPT:**

- A. A fall in FEV<sub>1</sub>
- B. A fall in arterial PO<sub>2</sub>
- C. A fall in FEV<sub>1</sub>/FVC ratio
- D. PaCO<sub>2</sub> is likely to be unaffected
- E. The work of breathing is increased.

**44. Regarding total lung compliance, indicate which one is FALSE?**

- A. Is slightly greater when measured during deflation rather than inflation?
- B. Is the pressure difference required to achieve a unit of air flow
- C. Is decreased in the presence of interstitial pulmonary fibrosis
- D. Is increased in the presence of emphysema
- E. Will be approximately halved following endobronchial intubation

**45. In calculating lung volumes, which one is FALSE?**

- A. Anatomical dead space may be estimated using the Bohr equation ✓
- B. V<sub>d</sub>/V<sub>t</sub> is normally 0.3 at rest ✓
- C. Functional residual capacity cannot be measured directly ✓
- D. Changes in expired nitrogen concentration may be used to determine closing volume ✓
- E. Changes in expired nitrogen concentration may be used to determine residual volume ✓

46. All the following increase pulmonary vascular resistance, EXCEPT:
- A. Maximal inspiration
  - B. Anaemia
  - C. Maximal expiration
  - D. Histamine
  - E. Chronic hypoxia
47. The D (A-a) O<sub>2</sub> difference is increased by all of the following, EXCEPT:
- A. Increased left atrial pressure
  - B. Decreased plasma oncotic pressure
  - C. Abdominal distension
  - D. Air trapping
  - E. A high inspired oxygen tension
48. Alveolar dead space is increased in all of the following, EXCEPT:
- A. Pulmonary embolism
  - B. Haemorrhage
  - C. Decreased tidal volumes
  - D. Changing from the supine to the erect posture?
  - E. Intermittent positive-pressure ventilation
49. One of the following causes a decrease in the arterial partial pressure of oxygen: ↓PaO<sub>2</sub>
- A. Anaemia
  - B. Carbon monoxide
  - C. Hyperventilation
  - D. A rise in physiological dead-space
  - E. Old age
50. Regarding the control of respiration all the following are true EXCEPT:
- A. Control by CO<sub>2</sub> is more through the central rather than the peripheral chemoreceptors
  - B. Hypoxia stimulates breathing via the peripheral chemoreceptors
  - C. The peripheral chemoreceptors are stimulated by hydrogen ions
  - D. The ventilation response to CO<sub>2</sub> is linear over the normal range
  - ✓ E. The ventilation response curve to CO<sub>2</sub> is shifted to the left in COPD ( ).
51. If oxygen is added to inspired air to increase its partial pressure from 150 to 450 mmHg, all of the following will occur, EXCEPT:
- A. Dissolved oxygen will increase approximately three-fold
  - B. The oxygen content of the blood will increase approximately three-fold
  - C. The PaN<sub>2</sub> will decrease.
  - D. The PaO<sub>2</sub> will increase approximately three-fold
  - E. Hypercarbia will not be affected.



**52. Regarding physiological dead space, all of the following are true, EXCEPT:**

- A. Is equal to the sum of the anatomical and the alveolar dead spaces
- ? / B. Is increased with use of PEEP
- C. Increases with increased lung volumes
- D. Can be calculated from  $\text{PaCO}_2$  and  $\text{PaO}_2$
- E. The ratio of  $V_d/V_t$  is approximately 0.3

**53. An area in the lung with increased ventilation/perfusion ratio, which statement is true?**

- / A. Represents dead space
- B. Represents shunt
- C. Is responsible for a decrease in the  $\text{PaO}_2$  with no change in  $\text{PaCO}_2$
- D. May be compensated for by an increased  $\text{FiO}_2$
- E. May be compensated for by an increased minute Ventilation

**54. Which of the following statements is FALSE?**

- / A. There are 7 cervical nerves
- B. There are seven cervical vertebrae
- C. T1 projects almost horizontally backwards
- D. T1 is the most readily palpable of the vertebral spines.
- E. The dural sac terminates at the level of the 2nd sacral vertebra

**55. The largest cartilage in the larynx is the**

- A. Arytenoid cartilage.
- B. Cricoid cartilage.
- C. Corniculate cartilage.
- D. Cuneiform cartilage.
- / E. Thyroid cartilage..

**56. About the anatomy of the femoral nerve, which statement is true?**

- A. Is formed in the lumbar plexus from L1-L2 roots
- / B. Is lateral to the femoral vein at the inguinal crease
- C. Is separated from the femoral vessels by the fascia lata
- D. lies deep to the fascia iliaca
- E. lies between fascia lata and fascia iliaca

**57. The triceps muscle is innervated by which of the following cords of the brachial plexus?**

- A. Medial and lateral cords.
- B. Posterior and lateral cords.
- C. Lateral cord only.
- / D. Posterior cord only.
- E. Medial cord only.

**58. The musculocutaneous nerve usually emerges from the**

- A. Lateral cord
- B. Inferior cord
- C. C5 nerve root
- D. Posterior division
- E. Axillary nerve

**UK 59. According to the Severinghaus electrode, one is true:**

- A. The electrolyte solution is sodium bicarbonate surrounding a pH-sensitive electrode
- B. Contains carbon dioxide-sensitive gas
- C. Not affected by temperature
- D. Is more accurate for blood than gas sample analysis
- E. Is affected by nitrous oxide

**60. The following can be measured with a dry spirometer:**

- A. Expiratory reserve volume (ERV)
- B. Functional residual capacity (FRC)
- C. Closing volume
- D. Total lung capacity (TLC)
- E. Dead space volume.

**61. Infrared gas analysis can be used to measure all of the following EXCEPT:**

- A. Nitrous oxide
- B. Oxygen
- C. Halothane
- D. Carbon dioxide
- E. Trichloroethylene

**62. If an electric current is fed through the body, all of the following are true EXCEPT:**

- A. Risk of injury is largely dependent upon the current flow
- B. Antistatic shoes provide good protection due to their high resistance
- C. High frequencies are more dangerous than low frequencies
- D. Ventricular fibrillation occurs at a lower current in patients with dysrhythmias
- E. A tingling sensation is felt at a current strength of 1 mA

**63. Most modern vaporizers are classified as all of the following EXCEPT:**

- A. Out-of-circuit
- B. Temperature compensated
- C. Flow-over
- ? - D. Pressure compensated
- E. Variable bypass

**64. Considering desflurane and the Datex-Ohmeda Tec 6 vaporizer for desflurane, which of the following statements is FALSE;**

- A. The vapor pressure of desflurane is six to seven times that of contemporary inhaled anesthetics. <sup>3-4</sup>
- B. Desflurane has a low blood gas coefficient, making recovery from anesthesia more rapid.
- C. Desflurane can boil at room temperature.
- D. The Tec 6 is electrically heated and pressurized.
- E. The Tec 6 output is affected by carrier gas composition.

**65. Factors influencing rebreathing include all of the following EXCEPT;**

- A. Back flow
- B. Fresh gas flow
- C. Mechanical dead space
- D. Design of breathing system.
- E. Type of endotracheal tube.

**66. Humidification and heating of inspired gases are best achieved by using:**

- A. Mapleson breathing system
- B. Lack breathing system
- C. Bain breathing system -
- D. Circle system -
- E. Jackson-Rees breathing system

**UK 67. Pressure gauges:**

- A. Work on the Bourdon principle
- B. Can be used to regulate gas flow
- C. Can convert gas at a high pressure into gas at a low pressure
- D. Form part of a flow meter
- E. Has no inertia

**68.. Halothane concentrations can be measured using the following methods EXCEPT:**

- A. Absorption to silicon rubber
- B. Ultraviolet light absorption
- C. Infrared light absorption
- D. Refractrometry
- E. Paramagnetism



**69. Regarding flow of gases:**

- A. It is proportional to fourth power of the radius in turbulent flow
- ✓ B. Resistance is directly proportional to length of a tube
- C. Low density gas is likely to develop turbulent flow
- D. Flow is not dependent on viscosity in laminar flow
- E. Flow is inversely proportional to the square root of pressure in turbulent flow

**70. At high altitude (6000 m), all are true EXCEPT:**

- ✓ A. The barometric pressure is the same as sea level
- B.  $FiO_2$  is 0.21
- C. The saturated vapour pressure of water is 6.3 kPa at 37 degrees Celcius
- D. The boiling point of water would be low
- E. Hypoxia predominates the ventilator drive

**71. One of the following statements concerning the fail-safe system of the anesthesia machine is correct:**

- A. Is a link between the flowmeters in modern machines to prevent a hypoxic mixture.
- B. Opens the  $O_2$  tank supply to the anesthesia machine if the wall supply fails.
- ✓ C. Senses a drop in main  $O_2$  pressure and proportionately decreases  $N_2O$  supply to prevent a hypoxic mixture.
- D. Prevents a hypoxic mixture if there is a leak in the system upstream from the vaporizers.
- E. Is placed between the flowmeters and the patients as an  $O_2$  sensor to prevent a hypoxic mixture.

**72. The statement that equal volumes of gases at the same temperature and pressure contain equal numbers of molecules is:**

- A. Charles' law
- B. Boyle's law
- C. Lavoisier's law
- ✓ D. Avogadro's hypothesis
- E. Archimedes' hypothesis

**73. The vapor pressure of a liquid is most dependent on the:**

- A. Atmospheric pressure
- B. Specific heat of the liquid
- ✓ C. Temperature.
- D. Thermal conductivity of the container
- E. Molecular weight of the liquid

**74. The number of calories required to raise the temperature of 1 gram of a substance by 1°C is:**

- A. The heat of vaporization
- B. The specific heat
- C. The critical temperature
- D. Thermal conductivity
- E. Equal for all substances

**75. The latent heat of vaporization:**

- A. Is equal for all liquids
- B. Is independent of the ambient temperature
- C. Varies with the temperature of the liquid
- D. Is very low for solids
- E. For water is 1 cal/mL

**GOOD LUCK** .

**THE ARB BORD OF HEALTH SPECIALIZATIONS  
SCIENTIFIC COUNCIL OF ANAETHESIA**

**FIRST EXAM – PAPER TWO  
16 SEPTEMBER 2014  
12 – 2 P.M**

NAME:

NUMBER:

CENTER:



1. A 63-year-old man presents for an elective laparoscopic cholecystectomy. He is obese, has angina at rest, and chronic obstructive pulmonary disease (COPD).

Which of the following would be his ASA classification?

- A. ASA I
- B. ASA II
- C. ASA III
- D. ASA IV
- E. ASA V

2. With his neck extended, mouth open, and tongue protruded, the patient's uvula is not visible. His airway should be classed as which of the following?

- A. Mallampati 1
- B. Mallampati 2
- C. Mallampati 3
- D. Mallampati 4
- E. Cormack 2

- UK 3. A Nitrogen washout curve is used to measure:

- A. Anatomical dead space
- B. Physiological dead space
- C. Vital capacity
- D. <sup>uneven</sup>Even ventilation of different areas of the lung
- E. Diffusion capacity

4. The normal response to surgery includes all of the following EXCEPT:

- A. A decrease in urine volume
- B. A decrease in the urinary excretion of sodium
- C. A decrease in plasma cortisol level
- D. An increase in the urinary excretion of nitrogen
- E. An increase in the urinary excretion of potassium

- UK 5. Regarding Intermittent porphyria all of the following are true EXCEPT:

- A. Is autosomal recessive
- B. Can present with autonomic dysfunction
- C. Can present with abdominal pain and no other signs
- D. Can present with psychosis
- E. Can be triggered by ethanol

6. All of the following are causes of central cyanosis in the immediate postanaesthetic recovery period **EXCEPT**:
- A. Shivering
  - B. Replacement of blood by crystalloid fluids
  - C. Malignant hyperthermia
  - D. Diffusion Hypoxia
  - E. Low cardiac output
7. Awareness during anaesthesia occurs less frequently in which of the following type of surgery:
- A. Cardiac surgery with cardiopulmonary bypass
  - B. Thoracic surgery with single lung ventilation
  - C. Anesthesia for obese patients
  - D. Obstetric anesthesia
  - E. Anesthesia for major trauma patients
8. A common immediate problem of laryngoscopy and intubation is:
- ✓ A. Hypertension
  - B. Dysrhythmias in more than 50 % of patients
  - C. Dislocation of the arytenoid cartilages
  - D. Bronchospasm
  - E. Surgical emphysema due to pharyngeal trauma.
9. You are confronted with an unexpected difficult ventilation and intubation of a pregnant patient. The parturient is anesthetized, but you were unable to intubate the trachea and mask ventilation is inadequate.
- What is your first choice for this situation?
- A. Insertion of an esophageal-tracheal Combitube,
  - ✓ B. Insertion of laryngeal mask airway (LMA),
  - C. Transtracheal jet ventilation (TTJV),
  - D. Emergent cricothyrotomy or tracheostomy.
  - E. Insertion of Fastrach LMA with cricoid pressure
10. Which of these mechanisms results in decreased blood pressure?
- A. Increased production of angiotensin II
  - B. Increased secretion of aldosterone
  - C. Increased vasopressin secretion
  - ✓ D. Increased secretion of atrial natriuretic hormone
  - E. Increased secretion of epinephrine

**11. Which of these structures deliver blood to the left atrium?**

- A. Coronary sinus
- B. Superior vena cava
- C. Inferior vena cava
- ✓ D. Pulmonary veins
- E. Pulmonary arteries

**12. Regarding MET, the standard metabolic equivalent, which one is TRUE?**

- A. MET is the O<sub>2</sub> consumption at rest = 3.5 mL/kg/min
- B. One MET for a 70 kg person 250 mL O<sub>2</sub>/min
- C. An example of 4 METs is two flight of stairs
- D. Example of 10 METs is strenuous activity such as jogging, basketball, swimming
- ✓ E. All correct

**13. Which of the following statements regarding arrhythmias is false?**

- A. In first degree heart block, the PR interval is prolonged
- B. In second degree heart block the QRS complex does not occur after every P wave.
- ✓ C. Third degree heart block is indicated by an abnormally long QRS complex following the P wave
- D. An ECG with a sawtooth baseline indicates atrial flutter.
- E. In atrial fibrillation the baseline is irregular.

**14. A 21-year-old athlete has laryngospasm following extubation after undergoing repair of an inguinal hernia during general anesthesia. Bag and mask ventilation relieves the patient's symptoms. In the PACU 15 minute later, he has dyspnea; SpO<sub>2</sub> is 85% at an FiO<sub>2</sub> of 0.40**

**Which of the following is the most likely cause?**

- A. Atelectasis
- B. Decreased cardiac output
- C. Pulmonary edema
- D. Pulmonary embolism
- E. Residual paralysis

**15. Which of the following factors will slow the induction of anesthesia in patients receiving volatile anaesthetics?**

- A. Addition of 70% nitrous oxide
- ✓ B. Increased cardiac output
- C. Increased minute ventilation
- D. Low blood/gas solubility coefficient
- E. Previous pneumonectomy



**16. A 58-year-old woman with rheumatoid arthritis and hyperactive gag reflex requires awake intubation prior to cervical spine stabilization.**

**Which of the following regional nerve blocks is most appropriate?**

- A. Deep cervical plexus
- ✓ B. Glossopharyngeal nerve
- C. Hypoglossal nerve
- D. Superior laryngeal nerve
- E. Trigeminal nerve

**17. A 16-year-old patient who sustained trauma is being resuscitated. In deciding whether to infuse lactated Ringer's solution or albumin, which of the following is true?**

- A. At one hour, both will remain in the intravascular compartment to an equal extent
- ✓ B. Both have zero risk for hepatitis transmission
- C. Both will decrease hydrogen ion transmission
- D. The glomerular filtration rate will be higher with infusion of albumin
- E. Lactated Ringer's solution causes a greater intracranial pressure

**18. Compared with healthy persons, patients with myasthenic syndrome (Eaton-Lambert) have increased:**

- A. Resistance to vecuronium
- B. Response to neostigmine during reversal of muscle paralysis
- ✓ C. Sensitivity to succinylcholine *to both*
- D. Susceptibility to development of malignant hyperthermia
- E. Weakness with repetitive activity

**19. Which of the following is associated with the application of a transdermal fentanyl patch?**

- A. Achievement of a peak plasma level within one hour
- ✓ B. Continued uptake after patch removal
- C. Dose-independent plasma clearance
- D. Tachyphylaxis when used for cancer pain
- E. Naloxone-resistant toxicity

**20. Which of the following statements concerning the management of diabetes mellitus during pregnancy is true?**

- A. Insulin requirements remain essentially unchanged during pregnancy
- B. Maternal blood glucose concentration of 200 mg/dL is optimal
- C. Maternal hyperglycemia may cause neonatal acidosis
- D. Neonatal hyperglycemia is common
- E. Infants delivered under general anesthesia have lower Apgar scores than those delivered under spinal Anesthesia

- 21. An adult patient with atrial fibrillation develops pulseless tachycardia while undergoing synchronized electrical cardioversion. Which of the following is the most appropriate management?**
- A. Intravenous administration of adenosine
  - B. Intravenous administration of a bolus of lidocaine followed by electrical cardioversion
  - C. Immediate repeat synchronized cardioversion at the same energy level
  - D. Immediate repeat synchronized cardioversion at twice the previous energy level
  - ✓ E. Unsynchronized electrical cardioversion
- 22. Fentanyl-induced bradycardia is:**
- A. Independent of the speed of injection
  - B. Independent of the dose
  - C. Caused by direct inhibition of adrenal catecholamine release
  - ✓ D. Caused by vagal stimulation
  - E. Caused by direct SA node depression
- 23. Fresh frozen plasma is indicated in each of the following situations EXCEPT:**
- A. After rapid transfusion of 1.5 L CPD-stored red blood cells
  - B. Antithrombin III deficiency
  - C. Replacement of factor VIII
  - D. Reversal of warfarin effect
  - E. Thrombotic thrombocytopenia purpura
- 24. The primary purpose of denitrogenation prior to anesthetic induction is to:**
- A. Blunt hypoxic pulmonary vasoconstriction
  - B. Improve ventilation and perfusion matching
  - C. Increase contribution of a second gas effect to rate of induction
  - ✓ D. Increase oxygen reserve in the functional residual capacity
  - E. Maximize arterial oxygen content
- 25. Pethidine, all the following are true EXCEPT:**
- ✓ A. Causes more miosis than morphine
  - B. Is metabolized to active substances with analgesic properties
  - C. Has a shorter duration of action than morphine
  - D. Possesses atropine-like activity
  - E. Has some local anaesthetic activity

**26. Regarding Naloxone, which one is FALSE?**

- A. Is an agonist at kappa receptors
- B. Is an antagonist at mu receptors
- C. Reverses ventilatory depression due to morphine
- D. May precipitate opiate withdrawal symptoms
- E. May cause pulmonary oedema

**27. Significant agonist activity at opioid receptors occurs with:**

- A. Clonidine
- ✓ B. Pentazocine
- C. Xylocaine when used for migraine
- ✓ D. Ketamine
- E. Naltrexone

**28. Non-depolarising neuromuscular blockers are potentiated by all**

**EXCEPT:**

- A. Lithium
- B. Diazepam
- C. Trimetaphan
- D. Magnesium
- E. Suxamethonium

**29. Amitriptyline in overdose causes all EXCEPT:**

- A. Cardiac arrhythmias
- B. Hypotension
- C. Restlessness
- D. Metabolic acidosis
- E. Jaundice

**30. Regarding Neostigmine, all of the following are true EXCEPT:**

- A. Is eliminated entirely by the liver
- B. Does not cause foetal bradycardia when given to a pregnant woman
- C. Causes miosis
- D. Is a quaternary ammonium compound
- E. Can cause late bradycardia

**31. Regarding Phenytoin, all of the following are true EXCEPT:**

- A. Shows first-order elimination kinetics -
- B. Induces enzymes
- C. Causes hypotension
- D. Usually has no effect on vitamin B2
- E. Has a half-life of about 4 hours



32. All the following are indications for pre-operative measurement of serum urea and electrolytes in patients admitted for elective surgery **EXCEPT**:
- A. Digoxin therapy
  - B. Well controlled insulin dependent diabetes
  - C. Recurrent urinary tract infection
  - D. Diuretic therapy
  - E. All patients over fifty years old
33. Hazards of anaesthesia in patients with chronic renal failure include all of the following **EXCEPT**:
- A. Left ventricular hypertrophy
  - B. Pericarditis
  - C. Hypertension
  - ✓ D. Enhanced carotid sinus activity
  - E. Cardiac tamponade
34. One of the following is considered as low fixed cardiac output:
- ✓ A. Aortic stenosis
  - B. Constrictive pericarditis
  - C. Mitral stenosis
  - D. Cor pulmonale
  - E. Digoxin toxicity
35. All of the following are nephrotoxic **EXCEPT**:
- A. Angiotensin converting enzyme inhibitors
  - B. Non-steroidal anti-inflammatory C-halothane
  - ✓ C. Halothane
  - D. Amino glycosides
  - E. Radio contrast agents
36. The first function to be lost during the onset of spinal anaesthesia is:
- A. Touch
  - B. Motor power
  - C. Temperature sensation
  - D. Vibration
  - E. Autonomic activity
37. Regarding Midazolam, all of the following are true **EXCEPT**:
- A. Has an elimination half-life of 6 hours
  - B. Imidazole ring contributes to its water solubility at low pH.
  - C. Metabolites are excreted mostly in the urine
  - D. Can have a prolonged effect if given with erythromycin-
  - E. Well absorbed after IM injection with peak level achieved in 90 minutes

38. Regarding Barbiturates, all of the following are true **EXCEPT**:
- A. Activate the reticular activating system in the brain stem
  - B. More potently affect the function of nerve synapses than axons
  - C. Potentiate the action of GABA
  - D. Induction doses cause a decrease in blood pressure and an increase in heart rate
  - E. The phenyl group in Phenobarbital is anticonvulsant
39. Which drug is an imidazole derivative?
- A. Thiopental
  - B. Ketamine
  - C. Propofol
  - D. Etomidate
  - E. Methohexital
40. Regarding Ketamine, all of the following are true **EXCEPT**:
- A. Is a structural analogue of phenylcyclidine.
  - B. Inhibits polysynaptic reflexes in the spinal cord.
  - C. Dissociates the thalamus from the limbic system.
  - D. Is useful for IM induction in uncooperative patients.
  - E. Has no active metabolites
41. The speed of uptake of an anesthetic agent from the lung:
- A. Is temperature dependent
  - B. Is proportional to the minimum alveolar concentration
  - C. Is proportional to the blood/gas solubility
  - D. Is proportional to the cardiac output
  - E. Is not proportional to the minute ventilation
42. Concerning the clinically used opioids, All are true **EXCEPT**:
- A. Pethidine is effective in reducing shivering from diverse causes
  - B. Fentanyl is metabolized to norfentanyl
  - C. Fentanyl has a large volume of distribution
  - D. Sufentanil has a clinical potency 100 times that of morphine
  - E. Remifentanil does not accumulate even after prolonged infusion
43. Regarding Cisatracurium; one is TRUE:
- A. Undergoes no urinary excretion.
  - B. 0.2 mg/kg offered acceptable intubating conditions at 60 seconds.
  - C. Has an elimination half life of 20 – 30 min
  - D. Produces more laudanosine than equipotent dose of Atracurium.
  - E. Is less potent than Atracurium.

44. All of the following characterize Sevoflurane EXCEPT:

- A. It does not increase heart rate
- B. Induction of anesthesia and rate of recovery are fast
- C. It causes significant skeletal muscle relaxation
- ✓ D. Metabolism of Sevoflurane does not produce compounds toxic to the kidneys
- E. It does not produce marked respiratory depression in clinical concentrations

45. The MAC (minimum alveolar concentration) is reduced in:

- A. Febrile subjects.
- B. Female sex.
- C. Chronic alcoholism.
- D. Prolonged duration of anaesthesia.
- E. Hypothyroidism.

✓ 46. One of the following is true of inhalational anaesthetic agents:

- A. Halothane is irritant to the airways.
- B. Isoflurane is a structural isomer of Halothane.
- C. Sevoflurane is fluorinated ether.
- ✓ D. Desflurane is a halogenated hydrocarbon.
- ✓ E. Enflurane is halogenated methylethyl ether.

47. Systemic vascular resistance is LEAST changed with:

- A. Isoflurane
- B. Sevoflurane
- C. Desflurane
- D. Enflurane
- ✓ E. Halothane

48. All of the following drugs may cause urinary retention EXCEPT:

- A. Morphine
- B. Ephedrine
- C. Atropine
- D. Amitriptyline
- ✓ E. Ketamine

49. All of the following are true for Tramadol EXCEPT:

- A. Its analgesic potential is believed to be mediated weakly through its effect on the mu-opioid receptor
- B. Has effect on 5-HT<sub>3</sub> and noradrenergic receptors
- ✓ C. Has antiemetic effect
- D. Produces antinociception
- E. Has an inhibitory effect on shivering



**50. In first order kinetics, all of the following are true EXCEPT:**

- A. The rate of excretion is proportional to the concentration of the drug present in the body at any time
- B. The plasma level decay is exponential
- C. Excretion must be purely renal
- D. Excretion must not be affected by administration of another drug
- E. 95% of the drug is eliminated in about three time constants

**51. All of the following are true about barbiturates EXCEPT:**

- A. The most commonly used barbiturate in anesthesia is Sodium Thiopental
- B. They are Barbituric acid derivative
- C. Hypnotic potency is determined by substitution at the Carbon atom number 5 of the Barbituric acid ring
- D. Its lipid solubility is enhanced by replacing the Oxygen with sulfur at the second Carbon atom of the Barbituric acid ring
- E. In clinical concentration, they affect preferentially the nerve axons

**52. The intravenous induction dose of anesthesia for Midazolam is:**

- A. 7-10 µg/kg
- B. 10-20 µg/kg
- C. 50-100 µg/kg
- ✓ D. 100-300 µg/kg
- E. 500-1000 µg/kg

**53. Concerning context-sensitive half-time:**

- A. It depends on the concentration of the drug in the plasma when the infusion is stopped.
- B. It is the inverse of the rate constant for excretion times.
- C. After two context-sensitive half-times, the plasma concentration will be one quarter of its value at the end of infusion.
- D. The context-sensitive half-time for Remifentanyl is shorter than that for propofol.
- E. It will increase linearly in proportion to the duration of infusion.

**54. The MAC of isoflurane is decreased by:**

- A. Ethanol-induced enzyme induction.
- B. Hyperventilation to a  $\text{paCO}_2$  of 25 mmHg.
- C. Chronic anemia to a hematocrit of 20%.
- ✓ D. Decreased body temperature to 34° Celsius
- E. Is the same as halothane

**55. H<sub>2</sub>-receptor antagonists are of benefit in the treatment of all of the following conditions EXCEPT:**

- A. Uncomplicated duodenal ulcer
- B. Zollinger-Ellison syndrome
- C. Mendelson's syndrome
- D. Uncomplicated gastric ulcer
- E. Reflux oesophagitis

**56. Which of the following muscle relaxants is eliminated the most by renal excretion?**

- A. Pancuronium
- B. Vecuronium
- C. Pipecuronium
- D. Rocuronium
- ? / E. Doxacurium

**57. The most common reason for patients to rate anaesthesia with etomidate as unsatisfactory is:**

- / A. Postoperative nausea and vomiting
- B. Pain on injection
- C. Recall of intubation
- D. Myoclonus
- E. Postoperative hiccups

**58. Which of the following vasopressor agents increases systemic blood pressure indirectly by stimulating the release of norepinephrine from sympathetic nerve fibres and directly by binding to adrenergic receptors?**

- A. Dobutamine
- / B. Ephedrine
- C. Epinephrine
- D. Phenylephrine
- E. Methoxamine

**59. The most important reason for the more rapid onset and shorter duration of action of fentanyl compared with morphine is the difference in:**

- A. Volume of distribution
- B. Hepatic clearance
- C. Renal clearance
- / D. Lipid solubility
- E. Protein binding

**60. The unique advantage of rocuronium over other non depolarizing muscle relaxants is its:**

- A. Short duration of action
- B. Metabolism by pseudocholinesterase
- ✓ C. Onset of action
- D. Lack of need for reversal
- E. Lack of potentiation with aminoglycoside antibiotics

**61. In which of the following situations is succinylcholine most likely to cause severe hyperkalaemia?**

- A. 24 hours after a right hemisphere stroke
- B. 14 days after a severe burn injury.
- C. 24 hours after a mid-thoracic spinal cord transection
- D. 2 days with severe abdominal infection
- E. Chronic renal failure

**62. Use of vasoconstrictors is least effective in prolonging anaesthetic action with which one of the following local anaesthetics?**

- A. Lidocaine
- B. Ropivacaine
- C. Procaine
- D. Prilocaine
- E. Amethocaine

**63. Which of the following is true concerning metabolism of local anaesthetics?**

- A. All local anaesthetics are metabolized in the liver
- B. Amide local anaesthetics are metabolized by Hoffman degradation
- C. Ester type local anaesthetics undergo hydrolysis by pseudocholinesterase
- D. Risk of ester toxicity decreases in neonates
- ✓ E. Ester type local anaesthetics undergo hydrolysis by non specific esterase

**64. Which of the following inhalational agents causes reduced blood pressure and heart rate:**

- A. Isoflurane
- ✓ B. Halothane
- C. Desflurane
- D. Nitrous oxide
- E. Sevoflurane



65. Which one of the following intravenous anesthetic agents has the least effect on cardiovascular and respiratory systems?
- A. Propofol
  - B. Thiopental
  - ✓ C. Etomidate
  - D. Midazolam
  - E. Fentanyl
66. Regarding Propofol, all of the following are true EXCEPT:
- A. It is extensively used for sedation in the intensive care unit
  - B. It has high clearance
  - ✓ C. Significant accumulation may occur
  - D. It is used for total intravenous anaesthesia
  - E. Bradycardia can be a side effect
67. Regarding Dexmedetomidine, which one of the following is TRUE?
- A. It is an alpha 1 antagonist
  - B. It has elimination half life of 20 minutes
  - C. It produces profound analgesia and sedation without respiratory depression
  - D. It acts on both alpha 1 and 2 equally
  - E. It causes tachycardia
68. Regarding Esmolol, all of the following are true EXCEPT:
- ✓ A. It has elimination half life of 20 minutes
  - B. It is a beta 1 selective blocker
  - C. It is metabolized by esterases in blood
  - D. It may cause hypotension
  - E. It is useful in management of supraventricular tachycardia
69. Regarding Dobutamine, all of the following are true EXCEPT:
- A. It is a synthetic inotrope
  - B. It has very dominant beta 1 effect :
  - C. It has a small Beta 2 effect
  - D. It stimulates dopaminergic receptors
  - E. It causes vasodilation
70. Regarding Noradrenaline, all of the following are true EXCEPT:
- ✓ A. It has predominant alpha 1 action
  - ✓ B. It has no effect on Beta receptors
  - C. Clinically it is used in septic shock
  - D. It is an extremely potent vasopressor
  - E. It is given by infusion

71. Regarding Ephedrine, all of the following are true **EXCEPT**:
- A. It is a bronchodilator
  - B. It has alpha and beta effect
  - C. It is used in hypotension following spinal anaesthesia in obstetrics
  - D. It has longer duration of action than adrenaline
  - ✓ E. It decreases MAC of anaesthetics
72. Regarding Glycopyrrrolate, all of the following are true **EXCEPT**:
- A. It is a quaternary ammonium compound
  - B. It cannot cross the blood-brain barrier
  - ✓ C. It may produce delirium
  - D. It is an anticholinergic drug
  - E. It is contraindicated in patients with narrow angle glaucoma
73. Regarding the drugs used in advanced life support, all of the following are true **EXCEPT**:
- A. Adrenaline is given 1 mg IV every 3-5 minutes
  - B. Vasopressin 40 units IV can replace second dose of adrenaline
  - ✓ C. Vasopressin 10 units IV every 5 minutes
  - D. Amiodarone 300 mg IV is given after third shock
  - E. All of the above drugs can be given intraosseous
74. Postoperative hypoxia at 15 minutes may be due to all of the following **EXCEPT**:
- A. Mild hypercapnia
  - ✓ B. Nitrous oxide diffusion.
  - C. Central depression
  - D. Increased V/Q scatter.
  - E. Shivering.
75. CO<sub>2</sub> narcosis is associated with all of the following **EXCEPT**
- A. Papilloedema
  - B. Raised JVP
  - ✓ C. Thready pulse
  - D. Discoloration of the skin
  - E. Muscle twitching

GOOD LUCK

**THE ARB BORD OF HEALTH SPECIALIZATIONS  
SCIENTIFIC COUNCIL OF ANAETHESIA**

**FINAL EXAM – PAPER ONE  
16 SEPTEMBER 2014  
9– 11 A.M**

**NAME:**

**NUMBER:**

**CENTER:**



- ✓ 1. **Regarding invasive blood pressure measurement:**
- A. Fluid bag should be kept 100mm/Hg above systolic pressure
  - B. Natural frequency of the diaphragm should be kept at equal to frequency of the BP.
  - C. Fluid level should be at 60cm above the heart.
  - D. Flushing the system could damage the heart valves.
  - E. Critical damping is adjusted according to natural frequency.
2. **Factors influencing rebreathing are all of the following EXCEPT:**
- A. Back flow
  - B. Fresh gas flow
  - C. Mechanical dead space
  - D. Design of breathing system
  - E. Type of endotracheal tube
- ✓ 3. **Hundred grams of soda lime can absorb as much as**
- A. 10 liters of carbon dioxide
  - B. 16 liters of carbon dioxide
  - C. 20 liters of carbon dioxide
  - D. 26 liters of carbon dioxide
  - E. 35 liters of carbon dioxide
4. **The laryngeal mask may be useful for the followings EXCEPT:**
- A. Spontaneous breathing
  - B. Resuscitation
  - C. Intermittent positive pressure ventilation
  - D. Microlaryngoscopy
  - E. Ophthalmic anaesthesia
5. **During a long operation, most reliable monitors of core temperature include:**
- A. Temperature probe at the tympanic membrane
  - B. Temperature probe in the rectum
  - C. Quadriceps muscle temperature
  - D. Temperature probe in the nasopharynx
  - E. Temperature probe in the oesophagus at the level of the cricoid

**6. BAIN CIRCUIT , all true EXCEPT:**

- A. High flow is supplied to overcome the rebreathing
- B. High flow is needed due to the fact that no reservoir bag as in Mapleson A circuit.
- C. High flow is needed to meet the patient peak expiratory flow.
- D. The bag is provided mainly for manual ventilation & to see the patient breathing.
- E. The circuit can be used in mechanical ventilation

**7. Which one of the following is the most appropriate action after an anesthetic vaporizer is tipped?**

- A. Flush the vaporizer with oxygen at 5L/min for 24 hours.
- B. Return to the manufacturer for recalibration.
- C. Verify the vaporizer output with mass spectrography.
- D. Store the vaporizer for 24 hours at room temperature.
- E. Set the vaporizer at low concentration and flush with oxygen at 10 L/min for 30 minutes.

**8. At high altitude (6000 m) all true EXCEPT**

- A. The barometric pressure is the same as sea level
- B. FIO<sub>2</sub> is 0.21
- C. The saturated vapour pressure of water is 6.3 kPa at 37 degrees C
- D. The boiling point of water would be low
- E. Hypoxia predominate the ventilator drive

**9. Cellular telephones commonly cause interference with a medical device if**

- A. Used anywhere within a hospital
- B. Used by a patient having an implanted cardiac defibrillator
- C. Used while standing next to an anesthesia machine
- D. Carried in a shirt pocket overlying a cardiac pacemaker
- E. Used by a patient having an intracranial aneurysm clip

**10. The lifetime of a canister of soda lime**

- A. Depends on the method of filling
- B. Is independent of the volume of CO<sub>2</sub> exhaled
- C. Is independent of the location of the relief valve
- D. Is prolonged by low gas flows
- ~~E. Is shortened by channeling~~

11. Effect of hypokalaemia is:

- A. Short PR interval
- B. Ventricular extrasystoles
- C. Elevated ST segments
- D. Long QRS interval
- E. Long QT interval

12. Concerning ECG, all true EXCEPT:

- A. The Q-T interval varies with heart rate
- B. In hypokalaemia the T wave is flattened.
- C. The U wave is more often seen when the heart rate is low. -
- D. A long QT interval is characteristic of hypocalcaemia.
- E. Left axis deviation occurs in left ventricular hypertrophy.

6

13. Which of the following is believed responsible for blindness in TURP syndrome?

- A. Sorbitol
- B. Glycine
- C. Mannitol
- D. Urea
- E. Glycogen

2

14. Concerning renal transplant, all are true EXCEPT:

- A. Patients should be recently dialyzed
- B. Check state of hydration – haematocrit
- C. Check acid-base status, K<sup>+</sup>, Ca<sup>++</sup>, Na<sup>+</sup>,
- D. Check coagulation status
- E. HB – levels <5.0 g/dl should be treated with 5-6 unit blood

✓ 15. For patients undergoing vascular surgery, myocardial ischemia most likely to occur?

- A. Preoperatively
- B. During the induction of anaesthesia ✓
- C. Intraoperatively
- D. In the immediate post operative period -
- E. 48-72 hours post operatively

✓ 16. Concerning pulmonary embolism, all true EXCEPT?

- A. Increase right ventricular afterload .
- B. Increase pulmonary arterial pressure leading to right ventricular dilatation .
- C. Delayed in right ventricular emptying, leading to splitting of heart sounds
- D. Decrease in the jugular venous pressure (JVP)
- E. Reduced pulmonary blood flow

8



17. In surgical correction of scoliosis, all are true **EXCEPT**:

- A. Carries low risk of spinal cord damage
- B. Is monitored by somatosensory evoked potentials
- C. Is facilitated by induced hypotension
- D. May involve division of the diaphragm
- E. Typically requires post operative ventilation for several days

18. All the following are absolute indications for one-lung ventilation **EXCEPT**:

- A. Pneumonectomy
- B. Massive hemorrhage
- C. Bronchopleural fistula
- D. Unilateral abscess
- E. Bronchopulmonary lavage

X 19. Midazolam, all are true **EXCEPT**:

- A. Has an elimination half-life of 6 hours
- B. Imidazole ring contributes to its water solubility at low pH
- C. Metabolites are excreted chiefly in the urine
- D. Can have a prolonged effect if given with erythromycin
- E. Well absorbed after i.m injection with peak level achieved in 90 minutes

20. Barbiturates, all are true **EXCEPT**:

- A. Activate the reticular activating system in the brain stem
- B. More potently affect the function of nerve synapses than axons
- C. Potentiate the action of GABA
- D. Induction doses cause a decrease in blood pressure and an increase in heart rate
- E. The phenyl group in Phenobarbital is anticonvulsant

X 21. Which drug is an imidazole derivative?

- A. Thiopental
- B. Ketamine
- C. Propofol
- D. Etomidate
- E. Methohexital

X 22. Ketamine, all are true **EXCEPT**:

- A. Is a structural analogue of phenylcyclidine.
- B. Inhibits polysynaptic reflexes in the spinal cord.
- C. Dissociates the thalamus from the limbic system.
- D. Is useful for i.m induction in uncooperative patients.
- E. Has no active metabolites

**23. The speed of uptake of an anesthetic agent from the lung:**

- A. Is temperature dependent
- B. Is proportional to the minimum alveolar concentration
- C. Is proportional to the blood/gas solubility
- D. Is proportional to the cardiac output
- E. Is not proportional to the minute ventilation

**24. Concerning the clinical use of opioids, All are true EXCEPT:**

- A. Pethidine is effective in reducing shivering from diverse causes
- B. Fentanyl is metabolized to norfentanyl
- C. Fentanyl has a large volume of distribution
- D. Sufentanil has a clinical potency 100 times that of morphine.
- E. Remifentanyl does not accumulate even after prolonged infusion.

**25. Cisatracurium: one TRUE:**

- A. Undergoes no urinary excretion.
- B. 0.2 mg/kg offered acceptable intubating conditions at 60 seconds.
- C. Has an elimination half life of 20 – 30 min.
- D. Produces more laudanosine than equipotent dose of Atracurium.
- E. Is less potent than Atracurium.

**26. The MAC (minimum alveolar concentration) is reduced in:**

- A. Febrile subjects.
- B. Female sex.
- C. Chronic alcoholism.
- D. Prolonged duration of anaesthesia.
- E. Hypothyroidism.

**27. One of the following is true of inhalational anaesthetic agents:**

- A. Halothane is irritant to the airway.
- B. Isoflurane is a structural isomer of Halothane.
- C. Sevoflurane is fluorinated ether.
- D. Desflurane is a halogenated hydrocarbon.
- E. Enflurane is halogenated methylethyl ether.

**28. Systemic vascular resistance is LEAST changed with:**

- A. Isoflurane
- B. Sevoflurane
- C. Desflurane
- D. Enflurane
- E. Halothane

- X 29. All of the following drugs may cause urinary retention EXCEPT:
- A. Morphine
  - B. Ephedrine
  - C. Atropine.
  - D. Amitriptyline
  - E. Ketamine
30. All of the following are true for Tramadol EXCEPT:
- A. Its analgesic potential is believed to be mediated weakly through its effect on the mu-opioid receptor
  - B. Has effect on 5-HT<sub>3</sub> and noradrenergic receptors
  - C. Has antiemetic effect
  - D. Produces antinociception
  - E. Has an inhibitory effect on shivering
31. Concerning context-sensitive half-time:
- A. It depends on the concentration of drug in plasma when the infusion is stopped.
  - B. It is the inverse of the rate constant for excretion times.
  - C. After two context-sensitive half-times the plasma concentration will be one quarter of its value at the end of infusion.
  - D. The context-sensitive half-time for Remifentanyl is shorter than that for propofol.
  - E. It will increase linearly in proportion to the duration of infusion.
- X 32. All the following are true regarding cardiac arrest in the first 24 hours post cardiac surgery EXCEPT
- A. Can occur due to disconnection of the pacing system in pacing dependent patients
  - B. Tension pneumothorax can lead to cardiac arrest during this period
  - C. Incidence of cardiac arrest can reach up to 3%
  - D. Survival to hospital discharge is around 20%
  - E. The effectiveness of cardiac compression can be verified by looking at arterial trace
- X 33. Regarding myocardial protection during cardiopulmonary bypass, all true EXCEPT:
- A. Myocardial hypothermia with myocardial temperature goals below 12-15 °C
  - B. Adequate cardioplegia
  - C. Topical cooling of the heart with icy saline slush
  - D. Right ventricular venting to prevent distention
  - E. Insulating pad on the posterior cardiac surface to prevent warming from mediastinal blood flow



**34. One of the following is true regarding fluid loss in burn:**

- A. Is proportional to the degree of burn
- B. Maximal during the first 24 hours
- C. Is more protein containing fluids
- D. It is due to increase urine output ×
- E. Should be replaced by blood ×

**35. An elevated left hemidiaphragm can be caused by all the following EXCEPT:**

- A. Left phrenic nerve paralysis
- B. Left lower lobe collapse
- C. Sinus inversus
- D. Left pleural effusion
- E. Left pneumothorax

18

**36. A patient with esophageal obstruction is to have a general anesthetic for esophagoscopy. He has had a barium swallow on the previous day. One of the greatest danger of the planned procedure is**

- A. Bleeding
- B. Hypotension
- C. Difficult intubation
- D. Aspiration
- E. arrhythmia

19

**37. Use of vasoconstrictors is least effective in prolonging anaesthetic action with which one of the following local anaesthetics**

- A. Lidocaine
- B. Ropivacaine
- C. Procaine
- D. Prilocaine
- E. Amethocaine

**38. Which of the following is true concerning metabolism of local anaesthetics :**

- A. All local anaesthetics are metabolized in the liver
- B. Amide local anaesthetics are metabolized by Hoffman degradation
- C. Ester type local anaesthetics undergo hydrolysis by pseudocholinesterase
- D. Risk of ester toxicity decreases in neonates
- E. Ester type local anaesthetics undergo hydrolysis by non specific esterase

20

39. Which of the following inhalational agents causes reduced blood pressure and heart rate :

- A. Isoflurane
- B. Halothane
- C. Desflurane
- D. Nitrous oxide
- E. Sevoflurane

21

40. Propofol, all true EXCEPT:

- A. It is extensively used in the intensive care unit as a sedative
- B. It has high clearance
- C. Significant accumulation may occur
- D. It is used for Total intravenous anaesthesia
- E. Bradycardia can be a side effect

22

X41. Dexmedetomidine , which one of the following is TRUE :

- A. It is an alpha 1 antagonist
- B. It has elimination half life of 20 minutes
- C. It produces profound analgesia and sedation without respiratory depression
- D. It acts on both alpha 1 and 2 equally
- E. It causes tachycardia

23

X42. Esmolol, all the following are true EXCEPT :

- A. It has elimination half life of 20 min
- B. It is a beta 1 selective blocker
- C. It is metabolized by esterases in blood
- D. It may cause hypotension
- E. It is useful in management of supraventricular tachycardia

24

X43. Dobutamine , all the following are true EXCEPT

- A. It is a synthetic inotrope
- B. It has very dominant beta 1 effect
- C. It has a small Beta 2 effect
- D. It stimulates dopaminergic receptors
- E. It can be used in cardiogenic shock in conjunction with noradrenaline

44. Regarding Ephedrine, all true EXCEPT

- A. It is a bronchodilator
- B. It has alpha and beta effect
- C. It is used in hypotension following spinal anaesthesia in obstetrics
- D. It has longer duration than adrenaline
- E. It decreases MAC of anaesthetics

25

45. Glycopyrrolate, all the following are true **EXCEPT** :

- A. It is a quaternary ammonium compound
- B. It cannot cross the blood-brain barrier
- C. It may produce delirium
- D. It is an anticholinergic drug
- E. It is contraindicated in patients with narrow angle glaucoma

26

46. During a rapid sequence induction, when would it be appropriate to release cricoid pressure?

- A. When the patient becomes unconscious.
- B. After the induction agent has been given but before the neuromuscular blocking drug is given.
- C. After proper placement of the endotracheal tube has been confirmed.
- D. Cricoid pressure is not indicated in this instance
- E. After good visualization of the vocal cords .

21

47. During CPR the code leader sees that there is no CO<sub>2</sub> waveform. What is **MOST** likely?

- A. Ineffective CPR
- B. Hypoventilation
- C. Esophageal intubation
- D. Low cardiac output
- E. Obstructed airway

28

48. What is the percentage of burned area for a 7 y/o with burns on the left side of the body, front and back?

- A. 34%
- B. 43%
- C. 29%
- D. 51%
- E. 75%

29

49. A patient who had been consuming large amount of a potassium chloride salt substitute, in addition to taking lisinopril for hypertension is found in the emergency to be hyperkalemic and develops stable ventricular tachycardia

What is most appropriate drug to be administered first?

- A. Epinephrine
- B. Calcium chloride
- C. Sodium bicarbonate
- D. Furosemide
- E. Insulin

30



50. Which of the following anesthetic drugs increase intraocular pressure?

- A. Depolarizing muscle relaxants
- B. Nondepolarizing muscle relaxants
- C. Benzodiazepines
- D. Barbiturates
- E. Clonidine

31

X 51. About muscles relaxants choose the TRUE

- A. The metabolism of Cisatracurium is by: Ester hydrolysis
- B. Interaction between Mivacurium-Cisatracurium is synergistic
- C. The administration of succinylcholine following reversal of neuromuscular blockade results in Prolongation of the action of succinylcholine
- D. Sugamadex is a reversal for all non depolarising muscle relaxants
- E. The best neuromuscular test to ensure the absence of sudden movements during ophthalmic surgery is TOF (train of four)

32

X 52. Stroke following carotid endarterectomy surgery is mainly caused by:

- A. Hypotension only
- B. Thrombosis only
- C. Embolic events only
- D. Thrombosis and hypotension
- E. Hypotension and embolic events

53. Concerning the anesthetic management of a patient with aortic stenosis consists of, all true EXCEPT:

- A. The avoidance of systemic hypotension
- B. Maintenance of sinus rhythm
- C. Maintenance of adequate intravascular volume
- D. Management of an elevated risk of myocardial ischemia.
- E. Management of hypotension with ephedrine and decrease oxygen demand

33

X 54. Prolonged irrigation of the bladder with isotonic saline for transurethral resection of the prostate is associated with:

- A. Confusion
- B. Hyponatraemia
- C. Hyperkalaemia
- D. Reduced osmolarity
- E. Haemolysis

**55. In a patient who has had a traumatic quadriplegia for one week, all true EXCEPT:**

- A. Intermittent positive pressure ventilation can cause hypotension
- B. Suxamethonium sensitivity occurs
- C. Retention of urine occurs
- D. Increased tendon jerks occur
- E. Steroids improve prognosis

**56. The 2010 AHA Guidelines for CPR and ECC emphasize the need for high-quality CPR, including all the following EXCEPT:**

- A. A compression rate of at least 100/min
- B. A compression depth of at least 2 inches (5 cm) in adults
- C. A compression depth of at least one third of the anteroposterior diameter of the chest in infants and children
- D. Allowing for complete chest recoil after each compression
- E. Ventilation rate of 15/min

34

**57. The 2010 AHA Guidelines for CPR and ECC recommend all the following EXCEPT:**

- A. Rescue breaths be given in approximately 1 second
- B. Compressions should be synchronized with ventilation once an airway device is inserted
- C. A change in the BLS sequence of steps from A-B-C (Airway, Breathing, Chest compressions) to C-A-B (Chest compressions, Airway, Breathing)
- D. The one rescuer should begin CPR with 30 compressions rather than 2 ventilations to reduce delay to first compression
- E. "Look, listen, and feel" was removed from the CPR sequence.

35

**58. Patients likely to develop adult respiratory distress syndrome include those suffering from, all the following EXCEPT:**

- A. Severe abdominal sepsis
- B. Renal failure
- C. Haemorrhagic shock
- D. Prolonged high-concentration oxygen therapy
- E. Burns to the limbs and trunk.

**59. Causes of a primary metabolic acidosis include all the following EXCEPT:**

- A. Vomiting
- B. Hydronephrosis
- C. Hypocalcemia
- D. Diabetes mellitus
- E. Intestinal fistulae

36

- X 60. For spironolactone select the portion of the nephron **MOST** responsible for its pharmacological effect
- A. Proximal tube
  - B. Descending limb of loop of Henle
  - C. Thin ascending limb of loop of Henle
  - D. Thick ascending limb of loop of Henle
  - E. Collecting duct
- X 61. A patient takes a tricyclic antidepressant and needs surgery. This patient:
- A. May have increased number of arrhythmias
  - B. Should have pancuronium and halothane as drugs of choice
  - C. Should stop the medication before surgery
  - D. May become hypotensive with ketamine
  - E. May have rapid emergence with thiopental
62. Antiplatelet agents include all of the following **EXCEPT**
- A. Acetylsalicylic acid
  - B. Acetaminophen
  - C. Ticlopidine (Ticlid)
  - D. Dipyridamole (Persantine)
  - E. Garlic
- 37
63. This catecholamine simultaneously can increase myocardial contractility, glomerular filtration rates, sodium excretion, urinary output, and renal blood flow:
- A. Phenylephrine
  - B. Isoproterenol
  - C. Dobutamine
  - D. Dopamine
  - E. Epinephrine
- 38
- X 64. Epidural analgesia in obstetrics is absolutely contraindicated in which of the following conditions:
- A. Refusal of the surgeon.
  - B. Left ventricular failure.
  - C. Pulmonary hypertension.
  - D. Placenta praevia.
  - E. Previous spinal surgery
- 39  
hemodynamic instability



65. Saphenous nerve block is indicated in:

- A. Tourniquet pain prevention
- B. Lateral malleolus surgery
- C. Calf surgery
- D. Great toe surgery
- E. Knee surgery

41

66. An interscalene block can lead to all of the following complications

EXCEPT :

- A. Seizures after injection of 2ml of local anesthetics
- B. Spinal anesthesia
- C. Respiratory distress
- D. Facial nerve paralysis
- E. Hematoma

42

67. About ultrasound-guided Popliteal nerve block, which statement is

TRUE?

- A. Provides complete anesthesia to foot and ankle
- B. Is done alone when thigh tourniquet is used
- C. Circumferential spread usually results in a complete block
- D. Can only be performed by the lateral approach
- E. Color doppler is not useful

43

68. Comparing alfentanil with fentanyl, indicate which is false:

- A. Fentanyl has a lower potency .
- B. Fentanyl is more ionized at pH 7.4.
- C. Fentanyl has a larger volume of distribution.
- D. Fentanyl has a higher clearance.
- E. Alfentanil is more protein bound.

69. Comparing lignocaine with prilocaine , which one is true?

- A. Lignocaine has a higher pKa.
- B. Lignocaine is less protein bounding.
- C. Lignocaine and Prilocaine were same potency .
- D. Lignocaine has a lower molecular weight.
- E. Lignocaine is less lipid soluble.

70. Concerning midazolam, which is true

- A. The onset of action is slower than diazepam
- B. The parenteral preparation is formulated in propylene glycol.
- C. It is highly lipid soluble at physiological pH .
- D. About 50% is excreted unchanged in the urine.
- E. It has no active metabolite.

40

**71. Concerning desflurane, which is true ?**

- A. It is a chlorinated methyl ethyl ether
- B. It has a boiling point approximately the same as that of isoflurane
- C. It has a molecular weight which is the same as that of enflurane
- D. It is stable in soda lime
- E. About 2% is recoverable as metabolite

**72. Ropivacaine, which is true:**

- A. Is a racemic mixture of the S and R isomers
- B. Shows an improved motor-sensory separation of local anaesthetic effects that is useful in providing pain relief
- C. Has a lessor potency than the Bupivacaine
- D. Demonstrates similar lipid solubility to bupivacaine
- E. Is more toxic than bupivacaine.

**73. Regarding antiemetics, which one of the following statements is true?**

- A. Dexamethasone has been shown to downregulate 5-HT<sub>3</sub> receptors in the chemoreceptor trigger zone
- B. As an anticholinergic, glycopyrrolate has useful antiemetic properties
- C. Cyclizine acts as an antiemetic by antagonism of muscarinic acetylcholine receptors
- D. Ondansetron exerts antagonism at 5-HT<sub>3</sub> receptors only in the chemoreceptor trigger zone and the nucleus tractus solitarius
- E. Nabilone is an antagonist at endogenous cannabinoid receptors ✓ 41

**74. All the followings are true regarding Rocuronium, Except :**

- A. Is more potent than vecuronium .
- B. Is chemically related to vecuronium.
- C. In suitable doses produces good intubating conditions in 60- 90 s.
- D. Rocuronium and vecuronium, both can be reversed by Sugammadex.
- E. Possesses no active metabolites.

**75. Sevoflurane, which is false**

- A. Is an ether
- B. About 5% undergoes biotransformation in the liver .
- C. Releases carbon monoxide when in contact with soda lime
- D. Has a lower SVP than isoflurane
- E. Has a blood:gas partition coefficient approximately half that of isoflurane

**GOOD LUCK**

**THE ARB BORD OF HEALTH SPECIALIZATIONS  
SCIENTIFIC COUNCIL OF ANAETHESIA**

**FINAL EXAM – PAPER TWO  
16 SEPTEMBER 2014  
12-2 P.M**

**NAME:**

**NUMBER:**

**CENTER:**



1. Which of the following agents used as adjunct in therapy of chronic pain can cause rebound hypertension after abrupt cessation of therapy
- A. Topiramate
  - ☒ B. Clonidine
  - C. Milnacipran
  - D. Carbamazepine
  - E. Gabapentin
2. About A- $\delta$  fibers choose the CORRECT ANSWER
- A. Are thick Nerves ✗
  - ☒ B. Unmyelinated fibers
  - C. Have a slower conduction than C fibers ✗
  - ☒ D. They are associated with sharp pain, temperature, cold, and pressure sensations
  - E. Are low-threshold mechanoreceptors ✗
3. Which of the following statement during ultrasound imaging for Regional anaesthesia is FALSE?
- ☒ A. Blood vessels are anechoic
  - B. Fat tissue is hypoechoic
  - C. Tendons are hypoechoic
  - D. Nerves can both be hyper- and hypoechoic
  - E. Acoustic shadow artefact is seen when beam meets bone. ✓
4. What is not a complication of an USG stellate ganglion block
- ☒ A. Horner's syndrome
  - B. Puncture of the inferior thyroid artery 3
  - C. A seizure
  - D. Oesophageal injury
  - E. Brachial plexus blockade
5. Which statement regarding the use of opioids for the management of acute pain is TRUE?
- ☒ A. In adults patient weight is the best predictor of opioid requirements ✗
  - B. Metabolism to codeine-6-glucuronide produces the analgesic effect of codeine
  - C. Morphine produces more nausea and vomiting than pethidine ✗
  - D. Pethidine is superior to morphine in the management of renal colic pain ✗
  - ☒ E. Tramadol has a lower risk of respiratory depression than other opioids at equianalgesic doses 4

6. "Allodynia" is:
- (A) Pain caused by stimuli that are usually not painful
  - B. The 'burning' sensation of causalgia
  - C. Red flare with nerve damage
  - D. Due to reflex sympathetic dystrophy
  - E. Not associated with nerve damage
7. The pain of chronic herpetic neuralgia is best controlled by
- (A) Ipsilateral stellate ganglionectomy
  - B. Intrathecal alcohol injection
  - C. Analgesic drugs
  - D. Dorsal rhizotomy
  - E. Topical capsaicin
8. In the treatment of phantom limb pain
- A. Calcitonin infusion is NOT effective
  - B. Gabapentin reduces the pain
  - C. Intravenous lignocaine reduces the pain
  - D. Ketamine provides long-term pain relief
  - (E) Opiates are NOT effective
9. Causes of prolonged postoperative recovery of consciousness are all of the following EXCEPT:
- (A) Heart failure. ✓
  - B. Intraoperative cerebral event ✓
  - C. Myxoedema ✓
  - D. Prolonged action of muscle relaxants ✓
  - E. Hypoventilation.
10. A patient has a CT-confirmed retroperitoneal haemorrhage. He is on warfarin for atrial fibrillation. His international normalised ratio (INR) is usually stable between two and three. It is now eight, and this may be explained by the recent commencement of a new drug. Of the following drugs, which is the most LIKELY to be responsible for the derangement?
- A. Clopidogrel
  - B. Paracetamol
  - (C) Amiodarone
  - D. Fluconazole
  - E. Metronidazole
- ↑ warfarin

11. A 54-year-old male requires emergency laparotomy. He has long-standing depression and is taking a monoamine oxidase inhibitor. Which one of the following monoamine oxidase inhibitors is LEAST LIKELY to cause incident during conduct of general anaesthesia?

- A. Moclobemide
- ☒ B. Phenelzine
- C. Isocarboxazid
- D. Tranylcypromine
- E. Iproniazid

12. Problems during a laparoscopic cholecystectomy include all EXCEPT:

- A. Fall in cardiac output with an intra-abdominal pressure of above 15 mmHg ✓
- B. Acidosis and hypercarbia in patients with cardiovascular disease after CO<sub>2</sub> insufflation
- ☒ C. Stress response significantly less than with open cholecystectomy ✓ (2)
- D. Increased incidence of regurgitation ✓
- E. Pneumothorax ✓

13. In severe anaphylaxis under anaesthesia, which of the following is MOST COMMONLY the first to be detected?

- A. Flushing of the skin
- B. Facial oedema
- C. Desaturation
- D. Difficulty in ventilating
- ☒ E. Decrease in arterial pressure (9)

14. Recognized features of fat embolism include all of the following EXCEPT:

- A. Mental confusion ✓
- B. Bradycardia ✓
- C. Petechial rash ✓
- D. Respiratory distress syndrome ✓
- ☒ E. Pyrexia. (10)

15. A young man admitted to casualty following a road traffic accident is found to have central dislocation of the hip and is shocked. MOST LIKELY cause is:

- A. Ruptured bladder
- B. Ruptured urethra
- ☒ C. Blood loss. (11)
- D. Neurogenic shock
- E. Fat embolism.



16. In patients with haemorrhagic shock all of the following are true EXCEPT:

- A. Physiological dead-space is increased ✓
- B. Renal blood flow is decreased ✓
- C. Antidiuretic hormone (ADH) secretion is increased ✓
- ☒ D. The oxygen dissociation curve is shifted to the left. 12
- E. Oxygen delivery is decreased. ✓

17. Concerning hip arthroplasty ONE IS TRUE

- A. Methyl-methacrylate is a cardiac inotrope x
- B. Hypoxia may be caused by marrow embolisation
- ☒ C. Regional techniques are associated with a greater overall survival rate ✓ 13
- D. Subcutaneous heparin will completely prevent DVTs x
- E. Hypocapnia produced by IPPV is beneficial. x

18. One of the following can be given by inhalation without causing systemic effects:

- A. Adrenaline x
- B. Orciprenaline
- C. Isoprenaline
- D. Beclomethasone. x
- E. Atropine. x

19. Complications of dextran-70 include all of the following EXCEPT:

- ☒ A. Hypocoagulability
- B. Interference with cross-matching ✓
- C. Hypervolaemia ✓
- D. Renal failure. ✓
- E. Antigenic reaction. ✓

20. Recognized causes of urinary retention include all of the following EXCEPT:

- A. Ketamine.
- B. Morphine
- C. Amitriptyline
- D. Ephedrine
- ☒ E. Frusemide. 15

21. For a patient suffering from Parkinson's disease on L-dopa, the following agent should not be used:

- A. Enflurane
- ☒ B. Droperidol
- C. Nitrous oxide
- D. Morphine
- E. Fentanyl.

(16)

22. Concerning analgesic drugs one is TRUE:

- A. Indomethacin is an addictive drug ×
- B. Paracetamol causes gastric irritation ×
- C. Unionised acetylsalicylic acid is absorbed more readily than the ionized form ×
- ☒ D. The analgesic properties of indomethacin are best seen when pain is associated with inflammation ✓
- E. Phenylbutazone is the drug of choice for headache.

(17)

23. Which of the following characteristics of local anesthetics is associated with long duration of action:

- A. High degree of lipid solubility
- ☒ B. High degree of protein binding.
- C. High molecular weight
- D. High pKa
- E. Presence of ester linkage

(18)

24. The side-effects of Enalapril, one is TRUE:

- A. Drowsiness
- B. Excess fluid retention
- ☒ C. Hyperglycaemia ✓
- D. Urinary retention
- E. Hyperkalemia

25. All of the following drugs are nephrotoxic EXCEPT:

- A. Kanamycin
- B. Clarithromycin
- ☒ C. Frusemide
- D. Amphotericin B
- E. Cephaloridine

19

26. Which of the following statements regarding sugammadex is TRUE?

- A. It is a modified  $\alpha$ -cyclodextrin
- B. The drug forms complexes with steroidal neuromuscular blocking drugs with a ratio of 1:2
- C. Following sugammadex administration to reverse rocuronium-induced neuromuscular blockade the measured total plasma rocuronium concentration will rise  $\times$
- D. The majority of the drug is metabolised and excreted by the kidneys  $\times$
- E. Sugammadex exerts its effect by binding with rocuronium at the neuromuscular junction  $\times$

27. In carbon monoxide poisoning the following are seen EXCEPT:

- A. Arrhythmias
- B. Hypotension
- C. Extensor plantars
- D. Cyanosis.
- E. Hyperventilation.

28. At 30°C:

- A. Oxygen consumption is one-third that at 37°C
- B. Oxygen solubility is decreased
- C. J-waves might appear on the ECG.
- D. Active rewarming should be commenced
- E. Carbon dioxide solubility is reduced.

29. In the oxygen dissociation curve, ONE of the following cause a right shift:

- A. Low-molecular-weight dextran
- B. Digitalis
- C. Hyperthermia
- D. Respiratory alkalosis
- E. Hypoxia.

30. Warming blood to 37°C during massive blood transfusion causes, one of the following:

- A. Decreases the risk of citrate toxicity  $\times$
- B. Decrease plasma potassium concentration  $\times$
- C. Increases plasma carbon dioxide tension
- D. Decreases the incidence of arrhythmia  $\times$
- E. Increases CO<sub>2</sub> buffering capacity of cells.



31. P waves are absent in

- A. Atrial flutter
- ☒ B. Atrial fibrillation
- C. Nodal tachycardia
- D. Ventricular tachycardia
- E. Hypokalaemia

(24)

32. A raised creatinine associated with normal renal function can occur in ALL of the following circumstances EXCEPT:

- A. Muscle damage ✓
- B. High muscle mass ✓
- C. Cimetidine therapy ✓
- ☒ D. Liver failure
- E. Red meat ingestion ✓

(27)

33. Chronic renal failure may lead to the following complications EXCEPT:

- A. Pericarditis ✓
- B. Peripheral neuropathy ✓
- C. Tertiary hyperparathyroidism
- D. Pruritus ✓
- E. Secondary hypoparathyroidism

(26)

34. The following may cause hyperkalaemia

- A. Amiloride treatment ✗
- B. Conn's syndrome
- C. Increase i.v. intake ✗
- ☒ D. Addison's disease
- E. Acute renal failure ✗

(25)

35. The oculocardiac reflex is prevented by all of the following EXCEPT:

- A. Atropine ✓
- ☒ B. Small increments of isoprenaline
- C. Retrobulbar block ✓
- D. Deep anaesthesia ✓
- E. Avoidance of traction on extraocular muscles. ✓

(28)

36. Intraocular pressure is increased by all EXCEPT:

- A. Hypercapnia ✓
- B. Extrinsic compression of the globe with an anaesthetic mask ✓
- C. Suxamethonium ✓
- D. Intubation ✓
- ☒ E. Deep inhalational and thiopentone anaesthesia

(29)

37. All of the following adversely affect the outcome of ventricular defibrillation, EXCEPT:

- A. Increasing time from onset of ventricular fibrillation (VF) to first defibrillation. ✓
- B. Age of Patient. ✓
- C. Acidosis. ✓
- D. Defibrillation during inspiration.
- E. Digoxin toxicity. ✓

(30)

38. Which ONE IS TRUE regarding the use of inhaled nitric oxide in ARDS

- A. Decreases systemic arterial pressure.
- B. Decreases pulmonary arterial pressure.
- C. Increases intrapulmonary shunt.
- D. Leads to toxic side effects in inspired concentrations of 110 ppm.
- E. Increase systemic venous oxygen tension.

(31)

39. Charcoal is effective in all of the following drug overdoses, EXCEPT

- A. Barbiturate.
- B. Antidepressant
- C. Diazepam.
- D. Theophylline.
- E. Cyanide

(32)

→ 40. Concerning the neuroleptic malignant syndrome, all the following are true EXCEPT

- A. Can be precipitated by droperidol
- B. Is potentially fatal
- C. Is characterised by dystonia, rigidity and hypothermia
- D. Can result in autonomic lability
- E. May lead to rhabdomyolysis

41. Vancomycin, which is FALSE

- A. Is effective against Gram +ve aerobic organisms
- B. Penetrates the CSF
- C. Is well absorbed orally x
- D. Can be associated with profound hypotension during intravenous administration
- E. Inhibits bacterial cell wall synthesis

(33)

42. Features of disseminated intravascular coagulation include all the following EXCEPT:

- A. A lowered fibrinogen level
- B. A prolonged prothrombin time ✓
- C. Heparin a reasonable treatment following placental abruption (34)
- D. May occur secondary to malaria
- E. May have a compensated phase with no bleeding. ✓

43. In ketoacidotic diabetic coma, which is FALSE

- A. Large volume administration of dextrose-free solutions are required in resuscitation ✓
- B. Potassium supplementation will be required
- C. The hourly insulin treatment adjusted according to sliding scale.
- D. Early use of Bicarbonate therapy is indicated (35)
- E. Artificial ventilation may be required ✓

44. Epiglottitis, which ONE IS TRUE

- A. Is commonest in children between six months and three years (36)
- B. There may be no systemic upset in the child
- C. Cannulation is mandatory before attempting to control the airway
- D. Staphylococcus is the usual causative organism
- E. Intubation for 24 hours is usual.

45. All the following are true regarding Organophosphorus compounds, EXCEPT:

- A. Are readily absorbed across the skin ✓
- B. Inhibit acetylcholinesterase ✓
- C. Has no effect on plasma cholinesterase (37)
- D. Can cause autonomic instability ✓
- E. Can have their action reversed by pralidoxime ✓

→ 46. Recognized effects of PEEP include all of the followings, EXCEPT:

- A. Sodium retention
- B. Fall in cardiac output ✓
- C. Rise in closing volume ✓ (40)
- D. Rise in FRC ✓
- E. Rise in CVP (cerebral venous pressure) ✓



47. In septic shock, all the followings are true, **EXCEPT**:

- A. Peripheral hypothermia is associated with poor prognosis ✓
- B. The patients usually have an increased cardiac output ✓ (38)
- C. The patients usually have a depleted circulating volume ✓
- D. The causative organisms are mostly Gram-negative ✓
- E. Antibiotics should not be given before blood culture results are available.

48. An 8-year-old child is rescued 20 minutes after drowning and has a core temperature of 30°C and fixed dilated pupils. Further appropriate treatment includes **ONE** of the following:

- A. Phenobarbitone
- B. Rapid rewarming (39)
- C. Hyperventilation ✗
- D. Steroids ✗
- E. Defibrillation in double usual dose. ✗

49. The following findings occur with a large pulmonary embolus, **EXCEPT**:

- A. An increase in pulmonary artery pressure ✓
- B. An increase in right ventricular pressure ✓
- C. An increase in left atrial pressure ✓
- D. An increase in physiological dead-space ✓
- E. Within normal right atrial pressure ✓

50. The following statements regarding intensive care unit (ICU)-acquired weakness are true **EXCEPT**:

- A. The incidence of critical illness polyneuropathy among septic shock patients on the ICU is 80% ✓
- B. Muscles of facial expression are spared by critical illness polymyopathy
- C. Presence of normal deep tendon reflexes does not eliminate the diagnosis of critical illness polyneuropathy
- D. Persistent hyperglycaemia is an independent risk factor for ICU-acquired weakness ✗
- E. Electrophysiological studies typically show a reduced nerve conduction velocity ✓

- 51. **Ultrasound, all true EXCEPT:**
- A. Provides real-time imaging guidance during needle advancement ✓
  - (B) Does not differentiate extravascular injection from unintentional intravascular injection ✗ (40)
  - C. Interface is the boundary between two tissue media with different acoustic impedances
  - D. Medical ultrasound commonly is in the 2.5-15 MHz range.
  - E. The pulse length (PL) is the distance traveled per pulse ✓
- 52. **The fall in urine output associated with major trauma may be caused by all the followings EXCEPT:**
- A. Haemorrhage ✓
  - B. A rise in antidiuretic hormone activity ✓ (41)
  - (C) A fall in aldosterone activity
  - D. An increase in the level of circulating catecholamines ✓
  - E. A rise in corticosteroid output
53. **A 72-year-old woman with stable angina is undergoing bowel resection. Anaesthesia is induced with etomidate. Five minutes after starting isoflurane 1% in nitrous oxide 50%, her blood pressure decreases from 110/84 to 70/40 mmHg. The MOST LIKELY cause is**
- (A) Coronary steal produced by isoflurane
  - B. Direct myocardial depression produced by isoflurane
  - C. Vasodilation produced by isoflurane ✗
  - D. Adrenocortical suppression produced by etomidate ✗
  - E. Myocardial depression produced by etomidate ✗
54. **The MAC of isoflurane is decreased by**
- A. Ethanol-induced enzyme induction.
  - (B) Hyperventilation to a  $\text{paCO}_2$  of 25 mmHg. (42)
  - C. Chronic anemia to a hematocrit of 20%.
  - D. Decreased body temperature to  $34^\circ$
  - E. Is the same as halothane
- 55. **H<sub>2</sub>-receptor antagonists are of benefit in the treatment of all the following conditions EXCEPT:**
- A. Uncomplicated duodenal ulcer
  - (B) Zollinger-Ellison syndrome (43)
  - C. Mendelson's syndrome
  - D. Uncomplicated gastric ulcer
  - E. Reflux oesophagitis

56. Which of the following is NOT included in tetralogy of Fallot?

- A. Patent ductus arteriosus
- B. Right ventricular hypertrophy ✓
- C. Ventricular septal defect ✓
- D. Overriding aorta ✓
- E. Pulmonary artery stenosis ✓

(44)

57. Which of the following muscle relaxants is eliminated the most by renal excretion?

- A. Pancuronium
- B. Vecuronium
- C. Pipecuronium
- D. Rocuronium
- E. Doxacurium

(45)

58. Which of the following vasopressor agents increases systemic blood pressure indirectly by stimulating the release of norepinephrine from sympathetic nerve fibres and directly by binding to adrenergic receptors?

- A. Dobutamine ✓
- B. Ephedrine ✓
- C. Epinephrine ✓
- D. Phenylephrine ✓
- E. Methoxamine ✓

(46)

59. The most important reason for the more rapid onset and shorter duration of action of fentanyl compared with morphine is the difference in

- A. Volume of distribution
- B. Hepatic clearance
- C. Renal clearance
- D. Lipid solubility
- E. Protein binding

(47)

60. In patients with blunt head trauma, cerebral perfusion pressure is determined by the gradient between:

- A. Diastolic pressure and central venous pressure
- B. Intracranial pressure and central venous pressure
- C. Mean arterial pressure and central venous pressure
- D. Mean arterial pressure and intracranial pressure
- E. Systolic pressure and intracranial pressure

(48)

CVP = MAP - 2/3 P



61. A patient has hoarseness after undergoing surgery involving the aortic arch. The most likely cause is an injury to which of the following nerves? (49)
- A. Glossopharyngeal
  - ☒ B. Left recurrent laryngeal →
  - C. Right recurrent laryngeal
  - D. Left superior laryngeal
  - E. Right superior laryngeal
- 62. During induced hypotension for clipping of a cerebral aneurysm in a 20-degree head-up position, the arterial pressure transducer should be zero referenced at which level? (50)
- A. External auditory meatus
  - ☒ B. Midaxillary line at the fifth intercostal space
  - C. Sternal notch x
  - D. Thyroid cartilage x
  - E. Top of the cranium x
- 63. Each of the following conditions is associated with upregulation of the acetylcholine receptor at the neuromuscular junction EXCEPT:
- A. Burn injuries ✓
  - B. Myasthenia gravis ✓
  - ☒ C. Prolonged bed rest
  - D. Prolonged use of neuromuscular relaxants ✓
  - E. Upper motor neuron injury ✓
64. Four days after subarachnoid hemorrhage and surgical clipping of a cerebral aneurysm, a patient develops cerebral artery vasospasm. Appropriate treatment included each of the following EXCEPT: (52)
- A. Admission of nimodipine ✓
  - B. Controlled hypertension ✓
  - C. Hemodilution to hematocrit of 33%
  - D. Hyperventilation to PaCO<sub>2</sub> of 25 to 30 mmHg
  - E. Increasing preload ✓
- 65. Each of the following conditions can be accurately evaluated with transesophageal echocardiography EXCEPT: (51)
- ☒ A. Intimal tear at the aortic arch
  - B. Intracardiac air ✓
  - C. Left atrial thrombus ✓
  - D. Patent foramen ovale ✓
  - E. Right atrial myxoma ✓

66. A 120 Kg 56 years – old man undergoing gastrectomy during anesthesia with Fentanyl and Isoflurane has a PetCO<sub>2</sub> of 35 mmHg and a PaCO<sub>2</sub> of 50 mmHg. His FEV<sub>1</sub> / FVC ratio is 80% of predicted. Heart rate is 120 bpm and arterial blood pressure is 80/40 mmHg. Which of the following is the most likely cause of the difference in PaCO<sub>2</sub> and PETCO<sub>2</sub> ?

(53)

- A. Aspiration pneumonitis
- B. Chronic obstructive lung disease
- C. Decreased cardiac output
- D. Decreased V<sub>d</sub> / V<sub>t</sub> ratio
- E. Increased Q<sub>s</sub> / Q<sub>T</sub> ratio

67. A patient is undergoing exploration of a stab wound to the left side of the neck. On awake laryngoscopy, the vocal cord is midposition and the right vocal cord is abducted during inspiration. The most likely cause of these findings is trauma to which of the following structures on the left

- A. C7-8 nerve root
- B. Stellate ganglion
- C. Glossopharyngeal nerve
- D. Superior laryngeal nerve
- E. Vagus nerve

68. Which of the following statements regarding latex allergy is TRUE

- A. Diphenhydramine is the drug of choice for latex-induced anaphylactic reaction
- B. Hospital workers are at equal risk as general population ✗
- C. It is more common in patients with frequent urethral catheterization ✗
- D. Latex gloves can be rinsed free of antigen ✗
- E. Skin testing should be performed immediately after an acute reaction in the operating room ✗

69. Compared with healthy persons, patients with myasthenic syndrome (Eaton-Lambert) have increased

- A. Resistance to vecuronium ✗
- B. Response to neostigmine during reversal of muscle paralysis ✗
- C. Sensitivity to succinylcholine ✓
- D. Susceptibility to development of malignant hyperthermia
- E. Weakness with repetitive activity ✗

(54)

70. After the bronchial and tracheal cuffs of a right endobronchial tube are inflated, ventilation through the tracheal port is not possible. This finding is most consistent with:
- A. Cuff occlusion of the right upper lobe bronchus
  - B. Intubation of the left bronchus
  - C. Left-sided tension pneumothorax
  - D. Overinflation of the bronchial cuff
  - E. Positioning of both cuffs in the trachea
71. During an inguinal hernia repair, a newborn infant will have a larger fluid requirement (in milliliters per kilogram) than an adult because of relatively greater
- A. Insensible water loss
  - B. Lean body mass
  - C. Metabolic rate
  - D. Sodium loss
  - E. Third space losses
72. A woman has weakness of the right quadriceps and a decreased knee jerk reflex on the right one day after forceps delivery under epidural anesthesia. The most likely cause is:
- A. Epidural hematoma
  - B. Intrapleural nerve trauma
  - C. Lithotomy positioning
  - D. Reaction to the preservative in the anaesthesia solution
  - E. Trauma from the epidural needle
73. Which of the following is most indicative of reflex sympathetic dystrophy?
- A. Dry skin
  - B. Dull pain that improves with movement ×
  - C. Fasciculations ×
  - D. Motor weakness
  - E. Pallor and cyanosis



**74. Which of the following statement concerning use of amitriptyline to treat chronic pain is true?**

- A. It acts primarily via opioid receptors
- ☒ B. It increases serotonin levels in the brain
- C. It is rarely effective for postherpetic neuralgia
- D. Onset of action occurs after four to six weeks of treatment
- E. Response depends on reversal of depression

(60)

**75. Which of the following will have the least effect on the shape of the autoregulatory curve for cerebral blood flow?**

- A. Isoflurane
- B. Nitroprusside
- C. Hypercrabia
- ☒ D. Essential hypertension
- E. Cerebral infarction

(59)

**GOOD LUCK**